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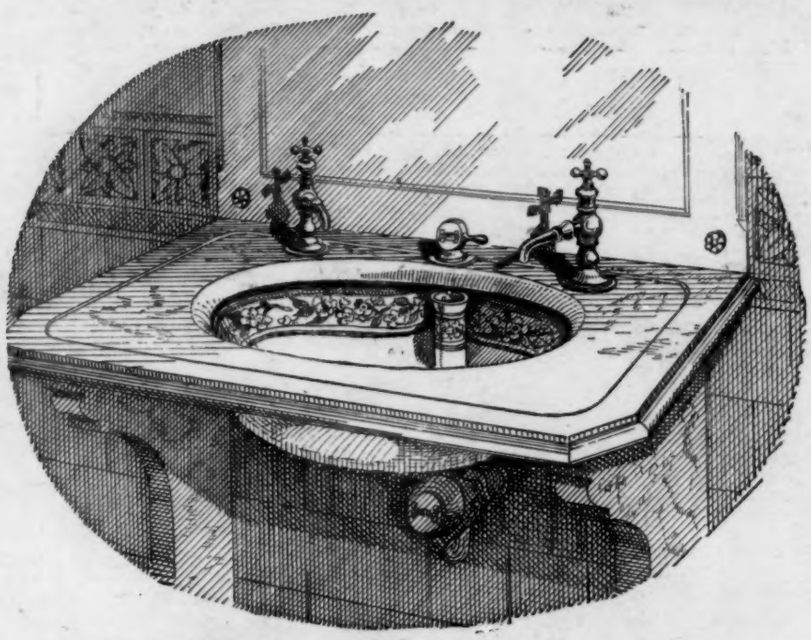
THE SANITAS LAVATORIES.

(BASIN, BATH-TUB, PANTRY-SINK.)



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THE Convention of the American Library Association, which was held this year in the Catskill Mountain region, amused itself, as usual, by falling foul of the architects, over whose prostrate forms every scientific hobby is made to prance. Beginning with the maxim laid down by the president of the Association, that "the architect is the natural enemy of the librarian," the audience approved the plan of the rooms for the library in the Albany State-house, prepared by a librarian, and then proceeded to "riddle" the plans for the Howard Library at New Orleans, prepared by the late H. H. Richardson. Not content with this, the Convention went on to "riddle" Richardson's library designs in general, declaring that they afford "little indication" that he ever "gave any thought to the object for which his buildings of this sort were intended," and that he "appears to have been satisfied if he drew a beautiful design, and to have left it to some draughtsman to fit in the books and the service;" and concluded by inquiring earnestly for "an artist who will plan for use first and beauty next, who will see where his book-shelves and his reading-halls and his work-rooms ought to go for the highest efficiency, and will then mould his library building around them." Considering that no two librarians appear to be agreed as to "where book-shelves and reading-halls and work-rooms ought to go for the highest efficiency," and that any plan advocated by one is generally laughed to scorn by the rest, it is not surprising that architects have not yet invented an arrangement which suits everybody, and that if they succeed in drawing a "beautiful design," which gives the accommodation that the owners want, and holds the requisite number of books in a convenient and accessible disposition, they are apt to be content, without troubling themselves whether all librarians would unite in a concert of praise over their work. In point of fact, Richardson, although he liked to draw "beautiful designs" for libraries, and generally succeeded in doing so, was very far from careless as to the object to which his building was to be put. As in all his work, the requirements of the case, so far as he could understand them, dictated the plan, and this suggested the rest, and to improve the arrangement he was never tired of studying methods of lighting, heights and widths of shelves, ease of access to the several portions, quiet for the reading-rooms, and space for the movement of the public. Although the librarians may find in his work no indication that he had studied these points to any effect, we will answer for it that other people do, and there are few persons, not librarians, who do not find an attraction in Richardson's comfortable, cosy reading-rooms, with their open fireplaces and separate tables, which the table-d'hôte arrangement of ordinary libraries, however well adapted it may be for celerity of movement behind the chairs of the readers and for slamming piles of books suddenly between them, fails to present. Nor, although we speak modestly of the arrangement of book-shelves, as a matter about which we profess little knowledge, does the Richardsonian plan of successive alcoves, with no shelves beyond reach from the floor, each brightly lighted by a window, and all communicating by convenient doors through the shelving, seem utterly bad in comparison with that adopted in libraries which have not been molested by architects. Not long ago we had occasion to look for a book in a rather famous library. We were directed to a certain room and set off in search. The way to the place indicated was up a narrow spiral stair. This ended in a small alcove, encumbered with a table, a chair and some portable steps. Thence, the path led along a balcony, some eighteen inches wide, overhanging the reading-room below, and guarded by a railing about the height of one's knees. At intervals the way was obstructed by furniture, which had to be hoisted up and deposited behind one to allow a passage, and the balcony ended in another spiral stair, which led to a room filled with book-shelves in stacks, with only room enough to pass between them. After examining all the stacks, we came to one which seemed to contain books relating to the subject in which we were interested, and the next operation was to find the one we wanted. There was a window, or a skylight, somewhere in the room, but only a few rays of light struggled so far as our stack. We could read the names of the books on one or two shelves, but there were other shelves above filled with books, the titles of which were invisible, while the books themselves, even if the names could have been read, were out of reach, except from steps, of which there were apparently none nearer than the balcony. We suppose that there was some virtue in the arrangement, as the "librarian's enemy" certainly had had nothing to do with it, but as compared with the roomy, light, accessible shelving provided by Richardson and many other architects, the collection, to the layman's mind, was clumsily and awkwardly accommodated.

OWING to the smallness and inconvenience of the buildings, and the value of the site for business purposes, the Custom-house and Sub-Treasury, on Wall Street, in New York, are to be sold, and more spacious buildings erected in some other place. What that place shall be is not yet decided. Mr. William F. Fryer, the skilful and experienced Superintendent of Repairs of the United States public buildings in New York, has made a report on the subject, in which he recommends that land should be taken either in the Bowling Green, or on Battery Park, but he prefers the Bowling Green. The *Engineering and Building Record* seems to think that Mr. Fryer proposes to appropriate the open space of the Bowling Green for buildings, which we trust is a mistake. It is hardly credible that the City of New York could convey, or the United States acquire, the right to erect an enormous building in the middle of the modest expansion of Broadway which goes by the name of the Bowling Green, and the obliteration by the Government of this little breathing-space, to save the cost of such land as private individuals would have to buy, would certainly cap the climax of the wanton meanness with which our Government sees fit to conduct public works. The other site proposed — that bounded southerly by the Battery Park, and westerly by West Street, with the open expanse of the Hudson River beyond, and extending easterly to Greenwich Street, closing up Washington Street from Morris Street southward, is in most respects finer than the other. Overlooking, as it does, the whole expanse of the bay, the new building would form an architectural termination to the city which is greatly needed. Until within a few years, the traveller approaching New York by sea was greeted by a shabby common, occupying the headland, in the midst of which stood the huge, but dilapidated shed of Castle Garden; the great business buildings of the city showing their blank party-walls through the smoke, a half mile or so away. Since the extension of the elevated railways the grass of the Battery Park has been kept in better order, but the black trestles of the railroad have made the whole effect worse than ever, and the great Field Building beyond them is rather too tall, and minute in detail, to be imposing. With, however, an immense Government building next door, the Field Building would show to advantage as a part of a very

noble group, facing the sea, and the building up of State Street with handsome structures would probably follow soon. Although the Battery, on account of the shallowness of the water south of it, does not furnish available wharfage, it is all the better suited on that account for the offices of persons interested in shipping, as it commands an unobstructed view of every vessel that enters or leaves the port of New York. We suppose that the merchant-venturers of Amsterdam, who took pleasure in having their vessels from Batavia or Guiana moored and unloading in the canal in front of their parlor windows, or the Genoese princes, whose palaces overlooked every movement in the harbor, would be considered old-fashioned in these days; but if American commerce should ever revive, there would probably be many persons who would be glad of an opportunity to watch it from so advantageous a situation as the streets around the Battery.

THE State Capitol at Austin, Texas, has proved unsatisfactory to the Board having its construction in charge, and it has been unanimously voted not to accept it or pay for it. It seems that the designer of the building, Mr. Myers, of Detroit, was not employed to supervise its execution, and some curious changes are said to have been made, with the consent of the State officials, from what the specifications required. The dome, for example, which was intended to be built of cast-iron, and was so shown in the drawings and specifications, and contracted for in accordance with them, is reported to have been made of galvanized-iron, at a profit to the contractor of forty or fifty thousand dollars; while the drainage system, which would have cost about fifteen thousand dollars, was entirely omitted. The question will occur to a good many people, whether it would not have been cheaper to pay the architect twenty or thirty thousand dollars for supervision than to let the contractor escape with sixty or seventy thousand that he had not earned, leaving the building with a dome which will surely go to pieces in a few years, but this question is as yet of less interest than the inquiry whether the State will have to pay the full price for what it has not got. Although the reports of the case are very meagre, we are by no means sure that it will not be compelled to do so. If the Capitol Board which now refuses to accept the building is the same as that which controlled its construction, it is very poorly equipped to resist the contractor's claim. Certainly, if it allowed variations from the specifications to be made, it will find it difficult to refuse to accept the building because its directions were followed; and the Board can hardly excuse itself for such errors on the ground of ignorance of the subject, after the expression, which is credited to the Governor, that he "he knew more about building than any four architects." The fact seems to be that the contractor found himself under the orders, not of an architect, but of a group of laymen, and played upon their ignorance, as many contractors know how to do, wheedling them into consenting to changes in his work, and managing the construction with enough show of zeal to deceive the amateur superintendents as to what was really going on. On the completion of the building, the Board withholds the money agreed upon as its price, on general principles, and searches about for excuses for doing so. Of course, its eyes being opened by some expert, it finds plenty, but it is embarrassed, apparently, by the fact that the defects in the building are mainly the result of its own orders. This, of course, makes no difference to the Board, but, if the case should come to trial, it will make a good deal of difference to the contractor; and we shall not be very sorry to have the battle fought out, for the sake of showing, if nothing else, how clumsily and wastefully boards of laymen conduct building operations.

THE manufacturers of plumbers' soil-pipe, who are rather prone to get into quarrels with the plumbers, are in hot-water again, about the testing of the goods they furnish. One of the regulations of the New York Board of Health requires that all soil-pipe used by plumbers shall be capable of resisting a pressure of five pounds to the square inch without leaking. Quite recently, rigid inspections of soil-pipes have been made to determine their quality in this point, and a very large number have been condemned. Naturally, the plumbers, who had bought the pipe for a high price, were indignant at finding about one-fifth of it condemned as worthless, and brought the matter before the Plumbers' Association, which officially requested the manufacturers to test the pipe before delivery. This the associated manufacturers refused to do, and the plumbers have now advertised in the newspapers that they wish to find some maker of iron pipe who will test the goods before delivery, and, if such a manufacturer is found, they promise to buy of him hereafter. For the interest of the public, we hope that this movement of the Plumbers' Association will succeed. The manufacture of plumbers' cast-iron pipe, as now carried on, is disgraceful to those who control it. There is certainly no more difficulty in casting double-thick soil-pipe, which the New York law now requires to be used everywhere, as evenly, and with as few flaws, as water-pipe, and if the manufacturers can afford to test water-pipe for imperfections, they can just as well afford to test plumbers' pipe, which is sold for a much higher price. The requirement of strength to resist five pounds per square inch is absurdly small. Such pipe ought to be tested, after putting into the house, at thirty to forty pounds to the square inch, and each piece should have a hydrostatic test of at least one hundred pounds before being allowed to leave the foundry. Nothing short of this will secure safety from the leakage into houses of sewer-gas, which is now proved to carry scarlet fever and diphtheria infection, as well as the germs of other diseases; and if this cannot be had with cast-iron pipe, the sooner the use of such pipe is forbidden the better. Already wrought-iron pipe has to a great extent superseded that of cast-iron for plumbers' use, and a general public announcement that the makers of cast pipe had resolved not to take the trouble to have it strong enough to resist a pressure equal to that exerted by a man blowing into it would soon close the market permanently against it.

WE publish elsewhere with much pleasure the circular of the Architectural League of New York, calling attention to the second annual competition for the gold and silver medals of the League, open to all residents of the United States, under the age of twenty-five, who may desire to try their strength in design and drawing. The subject for the present year is an admirable one. Nothing could be better calculated to test the real artistic capacity of the competitors, independent of the effective tricks learned in offices, and we have faith enough in American talent to believe that the exhibition of the competitive sketches will be well worth seeing.

MANY persons have seen something of Etruscan monuments or sculpture, and probably know that until within a few years the inscriptions accompanying the sculpture had never been deciphered. Although the cuneiform writing of Mesopotamia, consisting of characters entirely different from those of any known language, was soon understood, there seemed to be no key to that of the Etruscans. Very recently, however, a key has been found, strangely enough, in a modern language, or at least, one which is still spoken by six hundred thousand people; and not only has this well-known language of the Basque province of Spain served to interpret the writing of a people which was ancient before the wolf nursed Romulus and Remus on the Capitoline hill, but the relationship seems plainly to connect the modern Basques with the Pelasgi, those strange wanderers whose settlements extended from the Euphrates to the Atlantic. Singularly enough, the Basques have no ancient inscriptions or manuscripts, their language having been written only for three or four centuries, so that the allied portions of the Etruscan inscriptions are selected by comparison with words which have been preserved by oral transmission only for at least three thousand years.

A CORRESPONDENT of the *Builder* describes an analysis of two samples of mortar, one from a wall about two hundred years old and the other from a neighboring wall of about one-half that age. The mortar in the latter was very hard, while that of the other was soft, earthy and easily crumbled in the hand. On analysis, the two mortars showed almost precisely the same composition, the harder specimen having a little more lime and somewhat more silicate of lime, as if a chemical action had taken place between the lime and sand in one case, but not in the other. A microscopic examination showed, however, that the sand in the good mortar was in the form of angular grains, while in the other the particles were rounded, as if they had been taken from the seashore or the bed of a river.

BUILDERS' HARDWARE.[1] — VIII.

BUTTS.

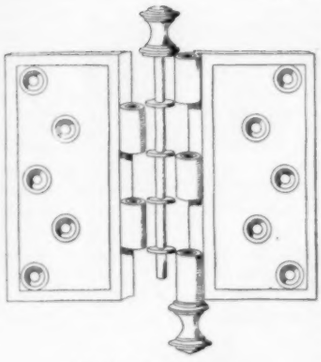

Fig. 85. Loose-pin Butt.

AS previously stated, a butt is properly a hinge which is screwed onto the butt edge of a door. The arrangement of the parts of a butt is governed somewhat by the direction in which the door is to swing, and in order to distinguish properly doors, and consequently the corresponding butts, they are designated as being right or left hand. This distinction is not always clear even to those who are somewhat familiar with the subject of builders' hardware; but a very simple way to remember which is right and which left, is to bear in mind that when a door, in opening, turns on its hinges in the same direction as is followed by the hands of a clock, it is a right-hand door, and contrarywise a left-hand door. In other words, the distinction is the same as is made in physics between positive or right-hand, and negative or left-hand deflections.

All of the commonest forms of butts are so made that the two leaves cannot be separated, the pin being riveted in place. This constitutes a fast-pin butt. Nearly all of the strap-hinges previously described are fast-pin. Such a form is not available for nice work, as it does not permit the door to be removed without unscrewing the hinge. The better class of butts are, accordingly, made with a loose pin, Figure 85, which can be readily withdrawn if the door is to be unhinged. A fast-pin butt would have exactly the same appearance as this when put together. Figure 86 is a third variety, known as a loose-joint butt. In this the pin is cast or attached solidly to the lower hub, working in the hollow hub of the other leaf, as shown by the dotted lines of the figure. This form permits the door to be removed with the greatest ease, it being simply swung clear of the casing and lifted bodily off of the hinge-pin. This style of butt is usually preferred in New England, though elsewhere the loose-pin butt is more generally employed.

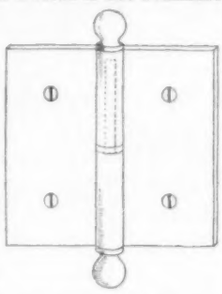

Fig. 86. Loose-joint Butt.

The obvious advantage of the loose-pin butt is, that the amount of bearing-surface is increased to a maximum, and as the pin is distinct from the leaves of the hinge, it can be made of a metal which will stand more wear than the ordinary bronze or iron of the butts. The loose-pin butt illustrated has eight bearing-surfaces. There are never less than four, but, even then the butt has a considerable advantage over the form shown by Figure 86. On the other hand, the loose-joint butt is more readily attached to the door and unhinged, and it costs less, though the difference in the latter respect is but slight. The difference in the amount of bearing is, in a measure, lessened in the best makes of loose-joint butts by accurately adjusting the length of the pin so that it will bear at its upper end against the top of the socket, which is usually closed by the false tip. Figure 87 shows an improved form of loose-pin butt made by the Yale & Towne Manufacturing Company, in which the pin and all the bearing-surfaces are of steel.

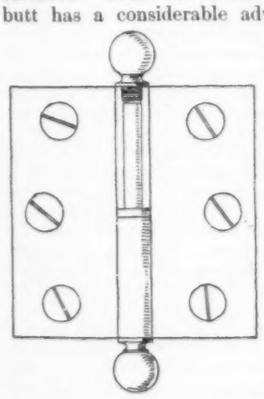

Fig. 87. Improved Loose-joint Butt. Yale & Towne Manufg. Co.

It will be readily understood that, even with the most multiple form of loose-pin butt, the bearing-surfaces would soon give out if not reinforced with some more durable material than bronze. Accordingly, in all but the cheapest kinds of goods, the bearing-surfaces are fitted with some form of steel washer. In loose-joint butts the washers are exposed, as shown by the figures, and, besides taking up the wear, are useful in adjusting the butts to the doors, as two or three washers may be used on a butt if necessary, though, of course, a first rate mechanic would fit the butts properly without any washers. Loose-pin butts may have washers in the same manner, but the more general custom is for the joints to be bushed, or provided with washers which are countersunk in the hubs of the butt, so as not to appear externally. The Yale & Towne Manufacturing Company has a device by which the bushings are imbedded in plumbago, enabling the joints to lubricate themselves by their own motion. A pair of hinges so prepared has been attached to a motor, and turned back and forth a number of times equivalent to the use of over thirty years, without showing any signs of wear.

Butts are made of a variety of metals, the commonest grades being of malleable-iron. The next grade is of wrought-iron or wrought-steel. Iron and steel butts are left either with a plain bright finish, japanned, bronze-faced, Bower-Barffed, or nickel-plated. For nicer work butts are made of brass, bronze, or silver. All of these styles of finish are in the market, and the different manufacturers so closely agree in their goods that it would be impossible to make any comparison. There are great varieties in finish and design of the portions of the butts which show, and of the tips of the pins. Some of these will be considered in a subsequent chapter.

The best butts for common or cheap work are made of wrought-steel. The following table is compiled from the catalogue of the Stanley Works, which is about the largest manufactory of goods of this description. The figures given are the average retail prices in Boston:

TABLE OF WROUGHT-STEEL LOOSE-JOINT BUTTS.

Screw holes in each Butt.	Size of Screw.	Size open.	Steeple-tips, washers. Bronzed polished. Price per doz. pairs.	No tips, No washers,[2] Common finish. Price per doz. pairs.
4	No. 8	2 x 2	$3.94	$1.36
4	8	2 x 2½	4.07	1.44
6	9	2½ x 2	4.54	1.72
6	9	2½ x 2½	4.80	1.84
6	10	3 x 2½	5.18	2.00
6	10	3 x 3	5.55	2.16
6	10	3 x 3½	5.81	2.32
6	11	3½ x 3	6.41	2.50
6	11	3½ x 3½	7.12	2.68
6	11	3½ x 4	7.84	—
8	11	4 x 4	8.17	3.38
8	12	4 x 4½	8.55	3.44
8	12	4½ x 4½	9.49	4.08
8	12	4½ x 5	10.05	4.32
8	13	5 x 5	11.59	5.28
8	13	5 x 6	12.48	5.76
8	13	5½ x 5½	13.50	—
8	13	6 x 6	14.62	6.72

The finer grades of butts include such as are used for nice interior work. The pin is sometimes made of the same metal as the butt, but is better made of steel, rigidly inserted in the lower hub. Butts were formerly finished by hand almost entirely, but some most interesting machinery has been devised for centring, drilling, turning and finishing the work with almost mathematical precision.

The following table gives the average retail prices of the butts manufactured by some of the principal firms in the country. The goods referred to are perfectly plain, with simple ball-tips. Figured patterns are apt to be somewhat cheaper, though the designs vary too greatly to admit of any fair comparison. The prices are for two butts with the necessary screws. All of Robinson's goods are hand-made. The others are machine-made. All of the butts are supposed to be steel-bushed or have steel washers.

[1] Continued from No. 665, page 133.

[2] For washers add from 35 to 50 cents per dozen pairs of butts.

TABLE OF LOOSE-JOINT, BALL-TIP BUTTS.

Sizes open.	Bronzed Steel, Fine Polished. Stanley Works.	Bronze, Brass or Nickel. P. & F. Corbin.	Bronze or Bower-Barff Iron. Yale & Towne Mfg. Co.	Bronze. Chicago Hardware Co.	Bronze. A. G. Newman.	Bronze. Enoch Robinson.
3 x 3	$ .70	$ .95	$1.00	$1.00	——	——
3½ x 3½	.90	1.12	1.25	——	——	——
4 x 4	1.00	1.42	1.50	1.35	$2.00	$2.50
4½ x 4½	1.30	1.70	1.75	1.75	2.25	3.00
5 x 5	1.50	1.92	2.00	2.00	4.00	3.50
5½ x 5½	1.75	2.42	2.50	2.25	5.00	4.50
6 x 6	2.00	3.00	2.75	2.75	6.00	5.00

Butts are also made in irregular sizes, that is to say, of such dimensions that when opened out flat they will not be exactly square. The forms more commonly employed, however, are the square sizes, as given above. Larger sizes than 6 x 6 are seldom used, as it is found better to increase the number of butts, rather than the size. The Robinson butts listed are so made that the ball-tip can be unscrewed, to permit of greater ease in oiling the bearings, and the pin is made to bear on its point against the head of the socket.

The Yale & Towne butts here listed are of the ordinary loose-joint pattern. The special makes are sold as follows, the prices referring to a plain, ball-tip butt, in either bronze or Bower-Barffed iron:

TABLE OF YALE & TOWNE BUTTS — SPECIAL PATTERNS. PRICES PER PAIR.

	3 x 3	3½ x 3½	4 x 4	4½ x 4½	5 x 5	5½ x 5½	6 x 6	6 x 8
	$	$	$	$	$	$	$	$
Loose-joint, steel bearings, as per Figure 87.	1.75	2.00	2.50	2.75	3.25	3.50	4.00	6.50
Loose-pin, extra heavy, five steel bearings, self-lubricating washers.	2.00	2.50	3.00	3.25	3.75	4.25	4.75	7.50

Too much care cannot be given to the selection of the butts or hinges which are to be used in the interior of a dwelling-house, for there is hardly any hardware about a building which is subjected to such constant and extreme wear as the door-hinge. Nor is there any department of house-trimmings in which so many poor grades of goods have been introduced, always excepting, however, locks. Even the best manufacturers have been forced to meet the competition in cheap goods, and often two butts will be sold by the same house, of which one will be poor and the other first-class, though, to a superficial inspection, they present exactly the same appearance. The whole secret, aside from mere questions of design and external finish, lies in the nicety of adjustment of the bearing-joints; and as the only sure test is that of actual wear, a poor butt looking as well when new as a good one, the wisest plan for the architect is to select his butts entirely from samples. A reference to a catalogue is not sufficient to ensure the proper quality of goods, unless one possesses an acquaintance with the hieroglyphics of the trade — which few architects ever acquire. To be sure, many clients want cheap goods, and some would prefer periodical visits with an oil-can to all the squeaky hinges in a house, rather than to pay the extra price for such articles as the Yale & Towne self-lubricating butts. Still, the obligation is no less on the architect to acquaint himself with the best of everything, as well as to know how to get it.

[To be continued.]

Aluminium Alloys. — Interesting experiments were made this week at the Brins Laboratory, at Lambeth, with aluminium and steel. A quantity of broken cast-iron, smeared with clay and a special flux, was transformed in the furnace into excellent steel, containing two per cent of aluminium. Under the influence of the flux the iron combines with the aluminium in a nascent state. The metal thus treated is highly sonorous and susceptible of a high polish. — *New York Evening Post.*

EQUESTRIAN MONUMENTS. — VII.[1]

PERISHED MONUMENTS. — THE FRENCH REVOLUTION.

An Elzevirian Frontispiece.

Petit Cheval, joli cheval,
Doux au montoir, doux au descendre,
Bien plus petit que Bucephel,
Tu porte un plus grand qu' Alexandre.[2]

It is not to be supposed that if an equestrian monument were erected to Phillipe le Bel similar memorials should not be created in honor of succeeding French monarchs, and in the reliefs of Louis XII over the entrances to the Château de Blois and the Hôtel-de-Ville at Compègne we have halting-places between the thirteenth and the seventeenth century.

The unstable Gallic nature knows no middle ground in the matter of likes and dislikes; its hero of the moment is a demi-god or even greater, and the enthusiasm with which Frenchmen of the time (1589–1610) regarded Henry of Navarre, the Bernese hero, knew no bounds, and so long as it existed the statue of Henry IV, placed on an abutment built out on the west side of the Pont Neuf at Paris, was an object of special regard.[3] This place was selected for the statue because the bridge was built by the order of the king himself.

Concerning the statue itself there are many traditions, each varying from the rest in some particular, but all agreeing that its career was uncommonly varied and romantic. According to what seems to be the best supported tale, it was determined about 1604 to erect an equestrian monument of the king, and a Flemish sculptor, Francavilla by name, prepared a sketch in wood, but seems not to have been considered a man of force enough to carry it out, and it was accordingly decided that the work should be carried out in Italy by Giovanni da Bologna, whose fame as the sculptor of the equestrian statues of Cosmo and Ferdinand de' Medici was well known to Marie, the wife of Henry. It is possible that the decision may have turned on the fact — if fact it be — that Giovanni had at that time on his hands the unfinished model of a horse for an equestrian statue of himself which had been ordered by the Grand Duke Ferdinand, but was not completed because of his death, and his successor, Cosmo II, instead of going on with the work, presented it to his cousin Marie. Be this as it may, Giovanni da Bologna was selected for the work in spite of his eighty years, and for a time he turned his attention to so transmuting his idea of an Italian prince that it should answer for a French monarch; but the little work he was able to do before his death was mainly bestowed upon the horse, which was essentially his. At his death the work fell to the care of his pupils, Pietro Tacca and Pietro Francavilla, who did not finish the statue for some years after Henry's assassination by Ravaillac in 1610. Completed at length in 1613, this statue[4] was embarked at Leghorn, but suffered shipwreck off the coast of Sardinia, and was supposed to be a total loss. It was, however, recovered, placed in another ship and proceeded on its interrupted voyage to Le Havre, where it was transferred to a flat-boat and towed up the Seine, reaching the Pont Neuf, July 24, 1614.

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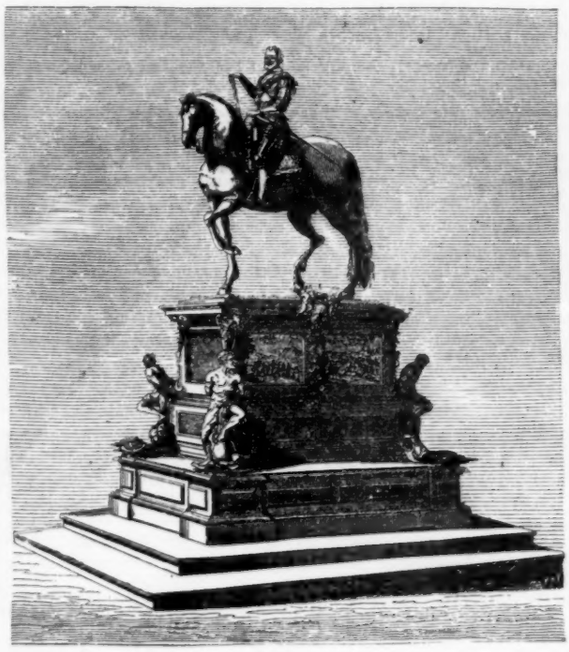
[1] Continued from page 145, No. 666.

[2] Improvised by Theophile on seeing the model of the statue of Henri IV.

[3] After the death of the Grand Dauphin, the people used to leave their petitions at the feet of the statue on the Pont Neuf.

[4] Man and horse measured about 5.70 m., and the total weight was 12,416 French pounds. The slaves about the pedestal were larger than nature.

Up to this point the different accounts which have been substantially in accord begin to differ: some say that the horse alone arrived from Italy and was at this time set up with great rejoicing and that the figure of the king was not placed upon its back until 1635, and was, consequently, modelled not by Tacca or Francavilla, but by Dupré. The best support for this story seems to lie in the fact that the statue was commonly called "*Le cheval de bronze*," as it was little likely to have been if at first the king's figure had surmounted it, unless the merits of the horse far outshone the artistic portraiture of the king. On the other hand, the Queen Regent would hardly have written to Tacca, after seeing the statue, that it was "in all verity worthy of the man it represents" if horse and man had not been forwarded from Italy; and an analysis of fragments of the horse and rider now in the Louvre show that the composition of the metal



The Original Statue of Henry IV, on the Pont Neuf, Paris.[1]

was identical in both parts. But there evidently was some great delay in finishing the statue — perhaps it was merely in the matter of adding the bas-reliefs and the figures of the four chained slaves about the pedestal, finished by Bordoni, the son-in-law of Luigi Civoli, who designed them — for the populace considered that their idol was not properly treated, and, by some freak of unreason, laid the blame at the door of the Italian Concino Concini, Marshal d'Ancre, the intriguing favorite of Marie de' Medici, and practically the prime minister of the kingdom. Popular detestation of this man was such that when, owing to the influence which the Chevalier de Luynes had over the young king, Louis XIII, his arrest was made by the king's order as he was entering the Louvre, and he was incontinently shot on the spot, the people exhumed his body after burial and dragged it through the mire to the Pont Neuf, and there before the statue of Henry IV tore it to pieces and burned the fragments, one savage tearing out his heart, half roasting and then swallowing it. The unfortunate man's wife, the former maid and confidante of Marie de' Medici, was afterward accused of witchcraft, beheaded and her body burned.

At a later time, too, the people showed in their peculiar way their respect for the good king, as when, during the year 1789, they dragged aristocrats from their carriages as they passed over the bridge and made them uncover and bend the knee before the statue. Even Philippe Egalité, Duke of Orleans, who voted as a member of the Convention for the death of his cousin, Louis XVI, was forced to make his obeisance in this way. The same feeling of veneration favored the statue through one short summer day, for during this short space the people hesitated whether to include this statue also in the destruction decreed against all the statues of former rulers, a decree which had resulted on August 11, 1792, in the overthrow, amongst others, of equestrian monuments of Louis XIII, Louis XIV and Louis XV. On August 12th, the crowd gathered on the Pont Neuf again and looked and once more hesitated, but finally the leaders succeeded in inflaming their passions by harangues and tirades, the decisive argument seeming to have been that after all Henry was not "a constitutional monarch." A rope was fixed about his neck and horse and rider were soon on the ground and broken to pieces; but the pedestal with its chained slaves was left uninjured.

In the hollow belly of the horse, wrapped up in a cylinder of lead was found the *procès verbal* drawn up by Francavilla himself and deposited there at the time of the erection of the monument, and when people found time to read it, it was found to give the lie to many of the fictions relating to the history of the creation of the monument and the truth concerning its sufficiently singular vicissitudes. A similar account was later found placed under one of the horse's feet. The four chained slaves, the hands, the left leg of the king and one of the horse's feet are now in the Louvre, and the head of the king is rumored to survive in some private collection.[2] The bas-reliefs represented the Battle of Arques, the Battle of Ivry, the taking of Amiens, the taking of Montmelian and Henry's entry into Paris. The Latin inscription was as follows:

HENRICO. MAGNO. FRANCIÆ. ET. NAVARRÆ. REGI. CHRISTIANISS. VICTORI. CLEMENTISS. GALLIARUM. RESTAURATORI. ORBIS. CHRISTIANI. PACATORI. OB. AVITAM. PERPET. QUE. CONJONCTIONEM. UTRILLS. QUE. LILI. FRANCI. ET. TUSCI. SEMPER. FLORENTIS. FERDINANDUS. MEDICÆNS. III. TUSCIÆ. DUX. CŒPIT. COSMUS. EJUS. FILIUS. ABSOLVIT. H. ÆTERNUM. BELLICÆ. VIRTUTIS. IPSIUS. MONUMENTUM. MARIA. REG. GALLORUM. REGENS. TANTO. CONJUGÆ. HEN. PARRICIDIO. SUBLATO. MUMES. HIC. RECEPIT. LUDOV. XIII. M. PARENT. MAG. INCREMENTO. PER. MAGISTRAT. URBICOS. CONSTITUIT. POP. URBIQUE. DONO. DEDIT. A. S. M. D. C. XIV.

Two other anecdotes serve to illustrate the feeling that was held toward this statue and its original, one told by Carlyle of an ancestor of Mirabeau who, a member of a troop passing by on its way to take part in the ceremony attending the erection of a statue of Louis in the Place des Victoires, raised his spontoon to his shoulder and "bawled out, 'Friends, we will salute this one; he deserves it as well as some.'" The other is told of the eccentric Sterne, who, one day, seized with an historic frenzy or overcome with artistic admiration, threw himself on his knees before the statue and was lost in contemplation, till at length, perceiving that he had become the centre of a wondering crowd, he cried out to them, "*Qu' avez-vous tous à me regarder! Quittez-moi tous*," at which adjuration the crowd in place of obeying him followed his example and prostrated themselves before the statue.

After a time-hallowed custom this statue was made to play a rôle in some of the pasquinades of the time, or mazarinades, as they were called in France, the interlocutors being the statue on the Pont Neuf and the statue of Henry's son, Louis XIII, in the Place Royale, the date of one that survives being the night of March 26, 1649.

Of the artistic character of the monument, the illustrations give some indications, and the present monument which was erected by Louis XVIII — the metal used being, through retributive justice, obtained from the statues of Napoleon from the Colonne Vendôme and the one at Boulogne, and the statue of Desaix in the Place des Victoires — was intended to be, so far as possible to make it so, a replica of the original. The fragments in the Louvre aid, moreover, in completing the mental picture, for the present pedestal lacks the accessories of the original. We have the queen's testimony that the likeness of the king was excellent, and the testimony of contemporary artists that the king was a better work of art than the horse, while the horsemen of the day protested that the best thing about the monument was the horse. The present horse has much of the sturdy monumental character of the two horses at Florence, and so is probably not unlike the original modelled by Giovanni. Some critics maintained that the man was too small for the horse, and this defect may have given support to the story that the horse was modelled in Italy and the man in France, a score of years later.

Another indication of the popularity of Henry and the persistence of the traditional love for him is, that when Louix XVI, from whom the people hoped so much, ascended the throne, some one inscribed on the pedestal of the monument on the Pont Neuf the word "RESURREXIT," while, to mark the antithesis, on the tomb of Louis XV at St. Denis was scrawled, "HIC JACET! DEO GRATIAS."

During the Revolution, and probably about the same time, was destroyed the bas-relief of Henry IV — on a background of black marble — which was over the main entrance to the Hôtel-de-Ville, at Paris, and over which was to be read the inscription, "*Sub Ludovico Magno felicitas urbis*," an inscription which might be supposed to indicate the approximate date of its execution were no other fact concerning it preserved. Work on the Hôtel-de-Ville, which had been begun in 1533, was actively resumed during the reign of Henry, and completed by the Italian Domenico di Cortona, Miron, the Prévôt des Marchandes, as the functionary now known as the Prefet de la Seine was then called, pushing the work forward with much activity. As a finishing touch to the work, Miron caused an equestrian bas-relief of Henry to be moulded in lead and fixed in 1605 upon a panel of black marble over the main entrance, the modelling being the work of Pierre Biard, who succeeded in making of it the best portrait of the popular original. It is doubtful whether even a nobler metal would have withstood successfully the unkind treatment measured out by fate against this piece of sculpture. During the last effort made by the Frondeurs, Condé marched against Paris, and sympathizers within the city threw open the gates to his forces, and during the ensuing days of tumult siege was laid to the Hôtel-de-Ville, and, other means of obtaining access to the building failing, a

[1] From M. F. Hoffbauer's "*Paris à travers les Ages*."

[2] In that of M. Convreur.

fire was built against the door which resulted, if in nothing else, in partly melting the leaden image over it. Enough of the original, however, was left to make it worth while for Louis XIV to order Pierre Biard *fils*, when quiet was restored, to also restore the sculpture, and this piece of rejuvenation was fairly successful; and, though not so good a portrait as before, was allowed to keep its place till the Revolutionists destroyed it.

The illustration shows a portion of the façade of the Hôtel-de-Ville as it existed before the Commune, and over the door in the place once occupied by the work of the Biards may be seen another bas-relief of Henry, executed by Lemaire. This, of course, was destroyed by the Communists in 1871, when they blew

The Present Statue of Henry IV on the Pont Neuf.

up the building and set it on fire. In the new building, dedicated a year or two ago, the space over the door is differently treated, but none of the later bas-relief have reproduced the female figures which in the work of Biard attended the footsteps of the monarch.

The Pont Neuf.—The second bridge built over the Seine and the longest in Paris was begun in 1578 by Henri III and finished by Henry IV, according to different authorities, in 1598, 1604 or 1607. It was rebuilt in 1852 and injured by a flood in December, 1885.

Henry IV.—("The Father of the People"—"The King of Brave Men.") King of France and Navarre; founder of the royal house of Bourbon; born at Pau, December 14, 1553; educated by his mother in the Protestant faith; married Marguerite of Valois, sister of Charles IX, and narrowly escaped the massacre of St. Bartholomew; became king of France, 1589, on the failure of the house of Valois; was opposed by the Duc de Mayenne; defeated the Roman Catholic League at Arques in 1589 and at Ivry in 1590; became a Catholic in 1593; entered Paris, 1594; proclaimed the edict of Nantes, 1598; divorced from Marguerite of Valois, 1599; married Marie de' Medicis, 1600; encouraged manufactures, agriculture and learning; assassinated by Ravaillac, 1610.

John of Bologna.—Born at Douai, Flanders, in 1525. He went to Italy at an early age, after an apprenticeship at Antwerp, and studied sculpture in Rome and France, founding his style upon that of Michael Angelo. A prolific artist and the best sculptor of his time. His best work is the "Flying Mercury" at Florence. Others are "The Rape of the Sabines"; "Hercules and Nessus"; "Virtue chaining Vice"; the colossal "Jupiter Pluvius" at the Villa Pretolino and the fountains at Bologna, Florence, Petraja and other places; "Samson killing a Philistine"; the doors at the Cathedral of Pisa, and a monument to Ferdinand I in the same city; "Venus" and "St. Luke"; and the equestrian statues of Cosmo and Ferdinand de' Medici at Florence and of Philip III at Madrid. He died in Florence in 1608 and is buried in the Church of the Annunziata.

Pietro Tacca.—A sculptor of Carrara, who flourished early in the seventeenth century. A pupil of John of Bologna, whom he assisted and some of whose works he completed after the master's death. Tacca died at Florence in 1640. Among his works are a statue of Jane of Austria, four slaves for the statue of Ferdinand I at Leghorn (by G. dell'Opera) and (his best) the equestrian statue of Philip IV at Madrid. In this he was assisted by a wooden model made by Montanes.

Pietro Francavilla or Pierre de Franqueville.—Francheville or Franqueville (Pierre de), sculptor, painter and architect. Born at Cambrai, 1548; died at Paris, about 1615; studied at Paris and in Innsbruck. In the latter place he studied under a skilful "sculptor in wood." He attracted the attention of the arch-duke Ferdinand, who sent him to Florence and recommended him to John of Bologna (1574), by whom he was (as a fellow-countryman) well received. He studied under him for some time, assisting him in many works. Francavilla's own works are: statues of "Janus" and "Jupiter" at the Grimaldi Palace, Genoa; and statues of saints, evangelists, etc., in San Lorenzo and Santa Croce, Florence. Having made for Jerome de Gondé, a Florentine noble living in Paris, a statue of Orpheus which was seen and admired by Henry IV, the King summoned Francavilla to Paris, gave him an apartment in the Louvre, and entrusted to him several orders. The two most remarkable are the two groups in the Tuileries Gardens, "Time bearing away Truth" and "The Rape of Cybele by Saturn." After the death of Henry IV, Francavilla was appointed Sculptor to the King. Louis XIII, who gave him the work on the pedestal of the statue of Henry IV. He made also a pedestrian statue of Henry IV for Pau. At the Louvre are his "Orpheus," "David vanquishing Goliath" and a bust of John of Bologna.

Pierre Biard.—1559–1609. Studied in Italy. Sculptured a "Christ on the Cross," and other figures for the choir of St. Etienne du Mont, Paris. He was also an engraver.

Guillaume Dupre.—Born probably at Paris; died at Paris about 1615; a medallist and coin founder; not much renowned as a sculptor.

Philippe-Henri Lemaire.—Born at Valenciennes, 1798; died, 1880; pupil of Cartellier; *Prix de Rome*, 1821; first exhibited at the *Salon*, 1827. His "Head of the Virgin" (1846) is at the Luxembourg. His chief work is the large decorative group in the tympanum of the Madeleine. His other important works are statues of Louis XIV, Kléber, Condé and Hoche for Versailles, Marshal Chevert for Verdun, Napoleon for the Bourse at Lille, Froissart for Valenciennes, "*St. Isaac harangue l'empereur Valens allant combattre les Goths*" (*composition des frontons de l'église St. Isaac, à St. Pétersbourg*), and a relief of the "Death of Marceau" for the Arc de Triomphe, Paris. Member of the Institute; officer of the Legion of Honor.

Francois Frederic, Baron Lemot.—Born at Lyons, 1771; died at Paris, 1827; pupil of Dejoux; *Prix de Rome*, 1790; Member of the Institute; professor at the Ecole des Beaux-Arts; officer of the Legion of Honor. Among his works are statues of Cicero, Numa Pompilius and Brutus, the great bas-relief on the *fronton* of the colonnade of the Louvre, representing "Napoleon in a Triumphal Car," and an equestrian statue of Louis XIV (formerly) at Lyons. Also a group of "*La Religion soutenant la reine Marie Antoinette*" for the Chapelle Expiatoire, and the car with two allegorical figures which accompanied the horses of St. Marks during their sojourn on the Arc du Carrousel.

[To be continued.]

THE ILLUSTRATIONS

[*Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.*]

THE REDPATH MUSEUM OF NATURAL HISTORY, MONTREAL, CANADA.

[Gelatine Print, issued only with the Imperial Edition.]

TENEMENT-HOUSE, ROXBURY, MASS. MESSRS. WINSLOW & WETHERELL, ARCHITECTS, BOSTON, MASS.

THIS tenement-house designed, in accordance with a general plan suggested by Dr. Arthur H. Nichols, consists of a central portion and two lateral wings enclosing three sides of a quadrangle open on the front and towards the sun, each part complete in itself, the only inter-communication being through the cellars. It is in that part of Boston formerly Roxbury, and the lot extends 135 feet on Eustis Street and 75 feet on Adams Street, contains about 10,256 square feet and has a southwest exposure. The central building being as before said set back from the street leaves a fore-court between the projecting wings, which allows the direct rays of the sun to enter each tenement at some time of the day, and ensures an ample supply of light. The basements or cellars are thoroughly lighted by broad area-windows, contain two Buerkel steam-heaters for warming certain rooms of the more expensive tenements, as well as the halls, and air-shafts, and are fitted with coal and wood bins for each family, communicating with coal-shoots so located that carts can back up to them. Here are also capacious storage-rooms, a common bath-room, a repair-shop supplied with benches and the ordinary tools of the carpenter, mason, plumber and gas-fitter to enable the janitor to attend to the incidental minor repairs.

The hall-ways throughout the building are finished in brick with no lathing, and the stair-cases have frequent square landings with as few winders as possible. Each kitchen is furnished with a sink of iron or soap-stone, two set soap-stone wash-tubs, a copper boiler for hot water, an ash-shoot with patent door and damper, also a portable range with a ventilator set in the chimney. The water-closets all open upon areas through which are carried whenever possible all the pipes in plain sight and easy of access; and in order still further to ensure an upward current of air, the smoke-pipe of the steam-heater passes through the main area in each of the larger buildings. This also prevents freezing of water-pipes and no such freezing has ever occurred except where a window was accidentally left open upon a kitchen pipe. There is no paint inside except on kitchen walls, the standing-finish being shellacked white wood.

Many of the rooms are quite small, but as they are conveniently arranged this has proved no disadvantage. Rentals vary from $12 to $21 per month, and the smallest tenements, those in the back part of the central building, being also the cheapest, are always in demand.

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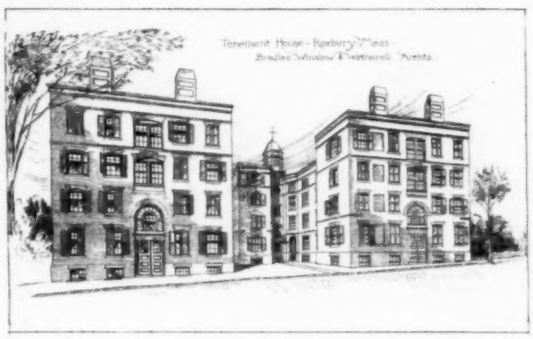
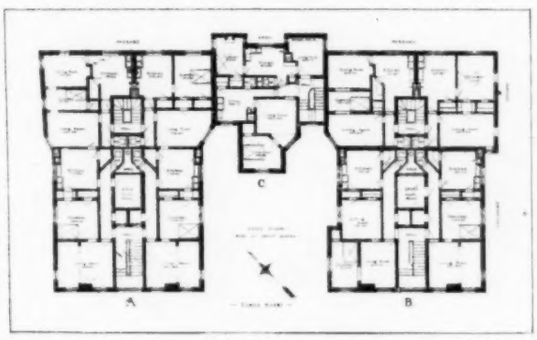
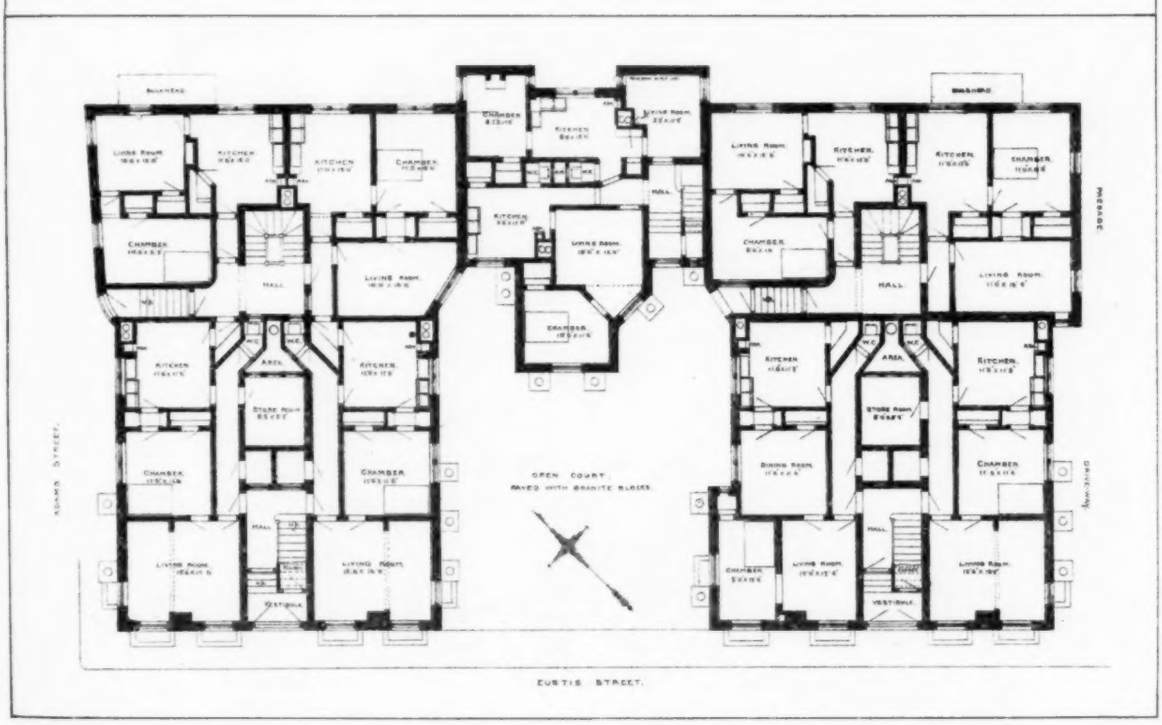


Tenement House - Roxbury Mass.
Bradlee Winslow & Wetherell Archts.





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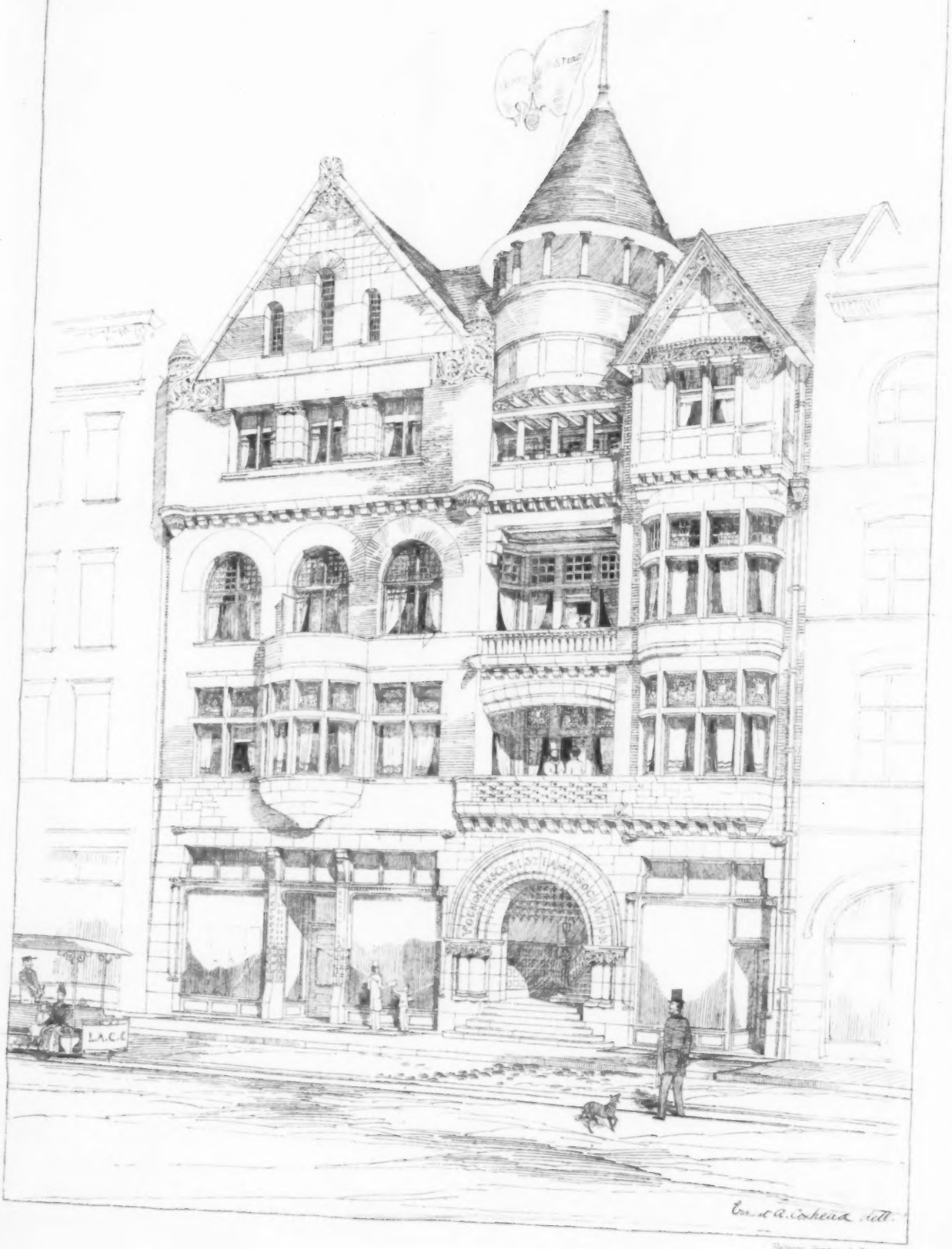
Young Men's Christian Association Building, Los Angeles.

Ernest A. Coxhead, Architect.



Ernest A. Coxhead, del.

Photo-Engraving Co. Boston

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THE HOTEL DE VILLE PARIS.
BEFORE THE COMMUNE.

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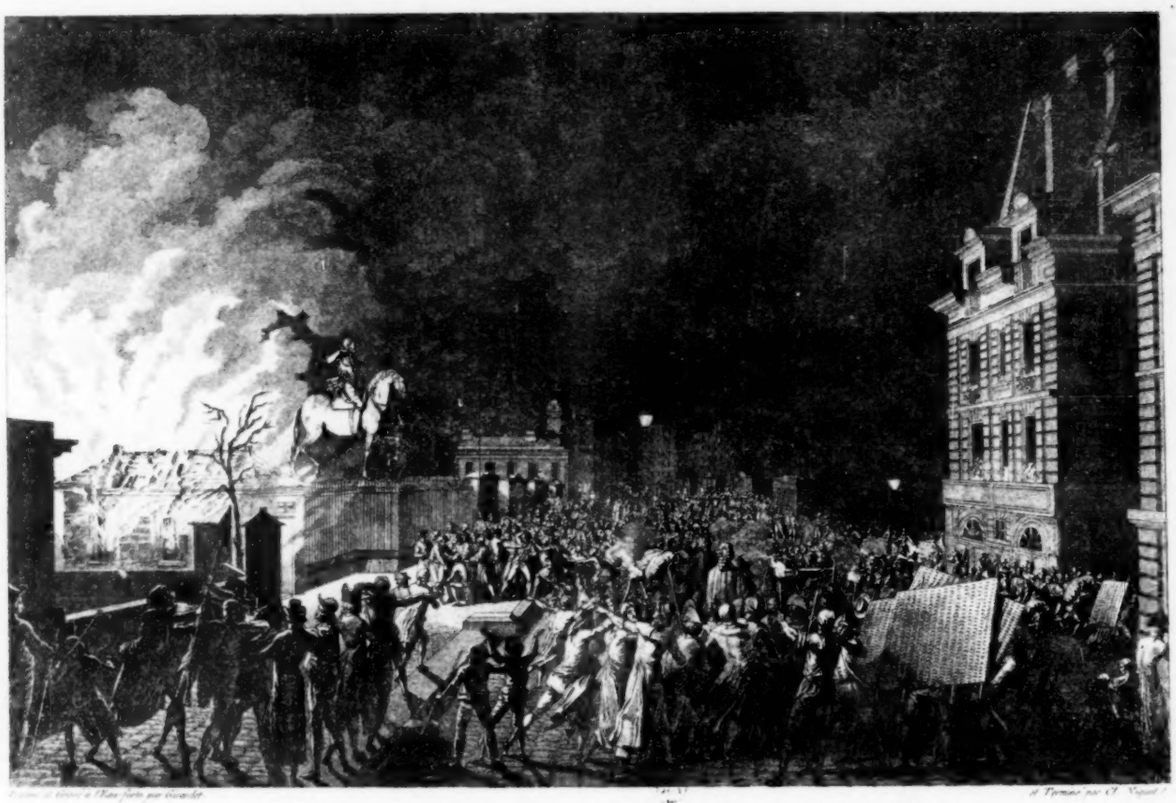
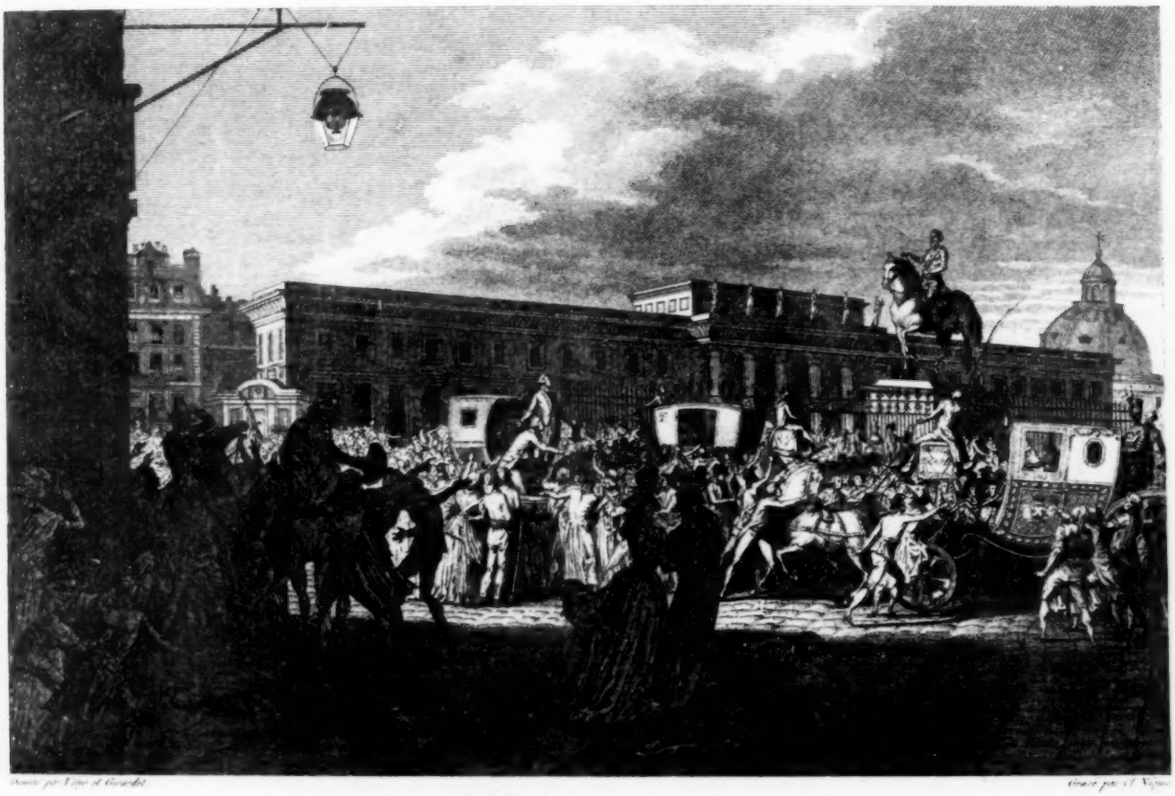


INCENDIE DU CORPS DE GARDE SUR LE PONT NEUF.

Le 29 Août 1788.

Cet Incendie eut lieu à l'occasion d'une Revue qui se passa entre le Peuple et le Guet à pied et à Cheval, qui le chargea sur les Cinq heures du Soir. Dans cet Instant le Peuple se vengea en mettant le feu au Corps de Garde. Il brûla sur la place Dauphine l'effigie des Mrs de Provence & d'Artois que le Peuple se vengea en mettant le feu au Corps de Garde. Il brûla sur la place Dauphine l'effigie des Mrs de Provence & d'Artois. Le Magasin du tavernier Boucher avec les Guérites et autres dépouilles des différens Postes de la Garde du Guet, et des Clairs [illegible] Rue de Bethisy, Rue de Valois, Quai des Augustins au de la Vallée.



RASSEMBLEMENT SUR LE PONT-NEUF.

Le 16 Septembre 1788.

Depuis plusieurs jours le peuple se rassemblait sur la place du Pont-Neuf. Il faisait sauter et casser à coups de bâtons les passans devant la Statue de Henry IV.

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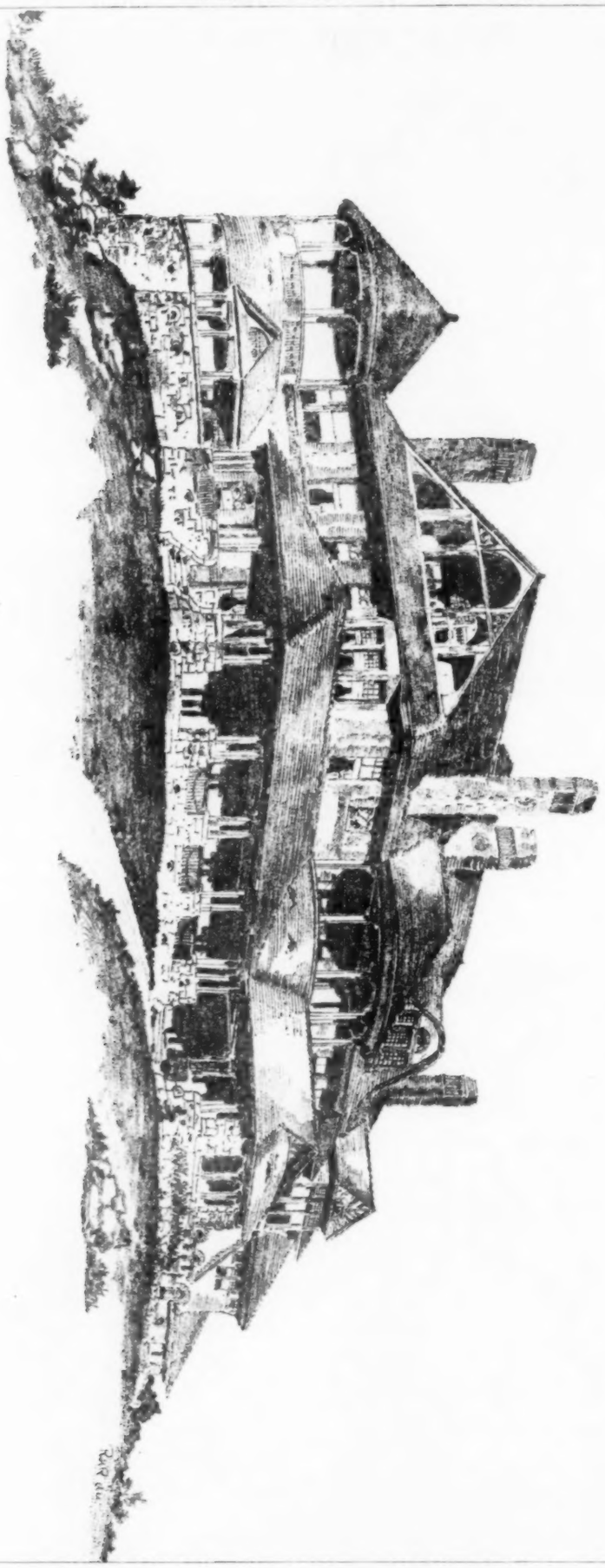

Design for Country House. R. H. Robertson, Architect.

Heliotype Printing Co. Boston

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The old : ROYALL MANSION : Medford : Mass :

Court yard Front

Guest Chamber

Garden Front

Heliotype Printing Co. Boston.

YOUNG MEN'S CHRISTIAN ASSOCIATION BUILDING, LOS ANGELES, CAL. MR. E. A. COXHEAD, ARCHITECT, LOS ANGELES, CAL.

The building when complete will cost in the neighborhood of $70,000. It has all the appurtenances of a Y. M. C. A. building with reading-room, library, reception-hall, recreation-room, class-rooms, auditorium 68′ x 44′, the space under forming the gymnasium. There are also lockers for 600 in basement besides swimming-bath, private baths, etc.

THE HOTEL DE VILLE, PARIS, BEFORE THE COMMUNE.

See article on "Equestrian Statues" elsewhere in this issue.

SCENES ON THE PONT NEUF, PARIS, FRANCE.

These illustrations are reproduced from "*Tableaux Historiques de la Révolution Française*," in connection with the article on "Equestrian Monuments."

THE ROYALL HOUSE, MEDFORD, MASS.

For description see elsewhere in this issue.

COUNTRY HOUSE DESIGNED BY MR. R. H. ROBERTSON, ARCHITECT, NEW YORK, N. Y.

THE ISAAC ROYALL HOUSE, OR THE "PLANTATION," MEDFORD, MASS.

The Royall House 100 Years Ago.

Eloquently do these fine old houses of the past, some charged with momentous associations of the Revolutionary era, all with historic interest, in the silent dignity and mellowness of their age arrest our observation as we hurry by in these mercenary days. How captious and offensive appears the intrusion upon their old acres of the speculative builder of to-day, and what a mockery the display of crazy art in the encroaching villas of the city clerk and commercial money-grubber. We hail with pleasure the slow awakening of local authorities to their duty of withholding the destroying hand and the preservation of their historic and architectural treasures.

Look at the house in question, with everything to commend it as a fine specimen of domestic architecture of its period. We now see its enriched cornices, bold fluted pilasters and entrance doorways crumbling away for want of a coat of paint. The old-time blinds hang tremblingly aslant on their rusty hinges. The boundary wall with its two gateways is gone. The drive-way a public street, and the noble elms, which once were the glory of the place, reduced to kindling wood. Look at Elmwood, Cambridge, — that also is to be laid out in building lots. There is a fine old house in Dorchester now completely enshrouded by a belt, not of its own patriarchal foliage, but of puffy, cheap "suburban residences," while several fine reminiscent buildings in the same district are in the last stage of dissolution.

In contrast to these note the Fairbanks House, Dedham, now in the hands of the Dedham Historical Society, the Rumford House, Woburn, similarly cared for, and the Vassal House, 1759, (Longfellow's) is, we believe, to be put into the hands of trustees for preservation to future generations. All honor to this movement, not at all too early. New England and the Bay State especially should be in the van to rescue her crumbling memorials of Revolutionary times and of the men associated with the proudest chapter of her history. As club-houses or museums many of these buildings could be readily, appropriately and economically converted to local requirements, with the advantage of possessing intrinsic merit in their historic associations.

Isaac Royall, a descendant of William Royall or Ryall — mentioned by Hazard as being sent over to this country as a cooper, or cleaver, in 1629 — after amassing a fortune in Antigua, most probably in the traffic of Antigua rum, on returning to New England selected Mystic, now Medford, as a resting-place for his declining days, and buying the estate, built his house in the year 1737. In the laying-out of the estate is manifested a refined taste, — so perceptible in the house itself that it appears strange that no architect's name should be associated therewith. Alas, will the name of the architect ever be of any account in this world? Why should the fat and flourishing builder who polishes off all the plums alone be considered worthy of mention with the proprietor in the criticisms of the daily press? Were the name of the architect duly and justly appended to the building itself, would not a grand stimulus be offered for his best endeavor?

Returning to the house, we find it built of brick, though sheathed on three sides with wood. The court-yard front faces west and also the garden proper, which is a large enclosure directly opposite. The east front, named "the garden front" in the sketch, faces the lawn, which slopes gradually down to the street, which used to be the old Boston road. Why is it that we now-a-days find the term "road" too ignominious and that every thoroughfare must be everlastingly called a "street"? There is a broad walk to the entrance on this side, and a visitor arriving by carriage either alighted at the central gateway or passed by the drive which bounded the estate on the right hand, or north, under the shade of magnificent elms and beeches to the court-yard and principal entrance. It is a curious fact that the house literally turns its back to the public road and its principal front demurely hides its face in the privacy of its own acres.

Emerging from the western door, we can readily picture its good-meaning proprietor mounting the steps of the family coach and rolling away to the Boston Town-House, where, as a member of the General Court, he long served his fellow-citizens of Charlestown. Be it here mentioned that Isaac Royall, the builder of this mansion, died close upon its completion, his widow surviving him only eight years and also dying here. Isaac Royall the second, an owner of considerable property in Boston and Medford, and whose wealth was also to a considerable degree accumulated in the traffic of Antigua rum, appears to have justly estimated his patrimony and taken good care of it. We may be sure his sideboard would be well supplied and the hearty old-time hospitality dealt out with no niggardly hand.

There appears a very perceptible distinction in the architectural treatment of the two fronts of the house, that facing the lawn and road presenting a genial look of invitation and welcome, the western front assuming a severe austerity which seems at once to bespeak the civic magnate.

The interior reception-rooms are very similar to the guest chamber, with more height, and whose deeply-recessed windows, with their ever-accommodating seats, seem still to whisper secrets of old-time gossip or sacred trysts held in their ample seclusion. Here we may picture George Erving or Sir William Pepperell paying their court to the merchant's two daughters with all the gallantry of that age. May we not follow them out into the hall, past the handsome old staircase with its richly-turned balusters and newel, across the pebbled court, through the quaint square garden, with its box-edged flower-beds and walks, to the summer-house (now demolished), a structure of no mean design, with its fluted Ionic pilasters and lantern roof surmounted by a winged Mercury? Here we will bid them adieu amongst the columbines, sweet-scented briar and rosemary "pledged to remembrance."

The low brick building at the end of the court-yard formed the quarters of the bevy of twenty-seven slaves Isaac Royall thought it good to bring with him from his tropical home; and until lately was to be seen the large arched fireplace and oven, now altered for the melting of maple syrup, but the substantial masonry is still there.

Colonel, or Isaac Royall the second, who served in King Philip's War, made the greatest mistake of his life in evading the service of his country during the time of the Revolution. His heart was here and bound up in her future welfare, but, because of an insurmountable dislike of contention and conflict, he left his estate, and after declining to serve as councillor, though summoned by mandamus, he managed to get away to England, only to have his new home and well-cultivated grounds confiscated.

Drake, in his "*Landmarks of Middlesex*," from which his history has been deduced, sums him up in a kindly and very honorable manner. "Peace be with the absconding royalist for an inoffensive, well-meaning, but shockingly timid old Tory. He would fain have lived in amity with all men and with his king too, but the crisis engulfed him even as his valor forsook him. His large-hearted benevolence showed itself in many bequests to that country to which he was alien only in name. The Royall professorship of law at Harvard was founded by his bounty. There was a town (Royalstone) in Massachusetts, named after him and he is remembered with affection in the place of his former abode."

It is noticeable that Penelope Royall, sister to Isaac, married Major Henry Vassall, whose brother, Col. John Vassall, had conveyed to him the "Brattle House" and estate, Cambridge. When the New Hampshire "rangers" pitched their tents in Medford, Col. John Stark found Madame Royall and her accomplished daughters occupying the house, and they willingly took him in as a safeguard against insult or any rough handling of the soldiery. Her confidence was not misplaced, for the bluff old ranger, we learn, paid her and her daughters every respect in return for their hospitality. Not long after his arrival at the camp, General Lee took up his quarters in the Royall Mansion, whose echoing corridors suggested to his fancy the name of Hobgoblin Hall. Washington required him to remove nearer to

his command. After Lee, Sullivan, attracted by the superior comforts of the old country-seat, fell into the same error and was remanded to his brigade by his chief.

In 1810, the mansion came into the possession of Jacob Tidd, in whose family it remained for half a century, and is now better known by the name of the Tidd house than by the old royalist's name. Ensconse yourself in any corner of the estate and look at it how you will, a dreamy quiet will steal over your senses, while your imagination runs riot in repeopling its broad walks and avenues, its echoing hall and chambers with a quaintly-costumed company, who seem to look askance at your look of surprise, yet bid you welcome to their memories and associations. You turn away with unfeigned regret and a sense of pain that the iconoclastic hand of to-day should be so ruthless in its haste to remove the old landmarks of our earlier country.

AUTUMN JOURNEYS IN MEXICO.—II.

VERA CRUZ.

Vera Cruz.—The Sea-Wall.

TO the Mexican, Vera Cruz speaks of wealth. There was something prophetic in the name given by the Spanish conqueror in 1519 to the city which he proposed to build on the spot where he had landed his men on Good Friday of that year—*La Villa Rica de la Santa Vera Cruz*—the *Rich* City of the Holy True Cross. Circumstances caused the removal of the city four times, but the fourth removal brought it back in 1600 to the original site selected by Cortez, and there the city was planted, and there it grew. It became a *rich* city indeed, representing for the most part the wealth of the country to which it belongs. It is the principal port of entry in the Republic. Before the Independence of Mexico (1821) its exports and imports aggregated about thirty millions annually, from which Spain derived a large revenue. The business of the port has decreased since railway communication with the United States has diverted the course of trade, but it is still an important commercial town. It has something over twenty thousand inhabitants. At one time, in the history of the Republic, when the country was overstocked with presidents—one of them being snugly ensconced in the big presidential chair at the capital—the other one set up his government in Vera Cruz, and supported it out of the revenues of the port until he could defeat his rival and open the way up to the capital.

Vera Cruz being reached after dark, there is no chance until the next morning to make observations of any of the features of the city excepting the hotel. The cool breeze is blowing off the Gulf, but the fact that the traveller is in the hot lands is obtruded upon him by the construction of the hotel. It is the "Hôtel de Mexico," fronting upon the mole and custom-house, and looking out over the water of the Gulf of Mexico. It is of four stories—an unusual height for a building in Mexico—and the floors of the immense halls from the ground to the top story, and the roof as well, are of iron gratings, thus ensuring the greatest amount of ventilation possible. But these iron gratings give to the traveller as he passes over them a sense of insecurity. Crossing the hall carelessly in the fourth story, he is apt to be filled with sudden alarm, when upon looking down he sees the floors below him. He appears to be standing upon a skylight and makes haste to get off. Even familiarity with these gratings fails to overcome the nervousness. It lasts as long as the traveller remains in Vera Cruz.

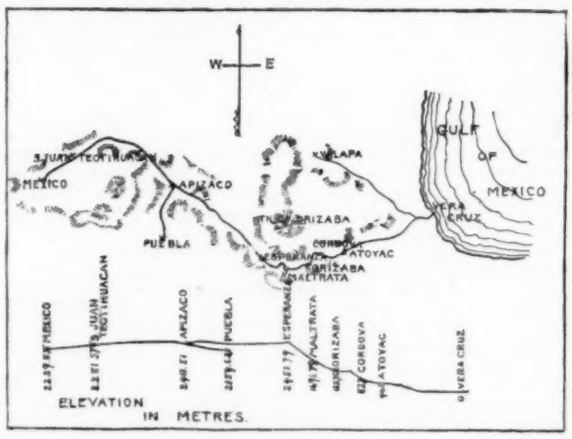
There is one feature of the dingy Hôtel de Mexico which won my admiration, and is worthy of imitation in other countries: the baths were of blue-and-white figured, glazed tiles. How clean and cool they looked! The bath is a feature of every Mexican town, but those tile-basins were the most attractive of any I saw in the country. These and the *huachinango* (red snapper) fresh from the Gulf, served up for supper, were the redeeming features of the Hôtel de Mexico.

There may be time after supper for a stroll in the main *plaza*, which is particularly attractive at night when the band plays, and the Vera Cruzans come out for a promenade under the watchful eyes of mammas or aged duenas. One's first impression of the Vera Cruzanas is that they are more voluptuous looking than the ladies of the other cities. Mexican ladies generally are of slight build, but the Vera Cruzanas are fully in accord with the vegetation of the tropical land in which they live. They adhere more closely to the typical dress of Mexico—the mantilla of lace in place of hat or bonnet—than the ladies of the capital, where French dressmaking and millinery have entered within the past few years. On the *plaza* of Vera Cruz one's first lessons in the different races composing the population of Mexico, may be taken. All are represented in Vera Cruz. The "whites" are the European residents or their descendants. The Indians, or natives, are the opposite class. Negroes abound and these three races are mixed as follows: "Mulattoes," whites and negroes; "mestizos," whites and Indians and "zambos;" Indians and negroes. Even at night the difference between Vera Curz and the inland cities is quite marked, in population and otherwise. Its resemblance to the West Indian cities is striking. The Spanish spoken is more like that of Cuba than that spoken in the interior of Mexico.

By day the first object to which the attention is directed, is the fortress of San Juan de Ulua, off the coast in front of the city, and the traveller will not fail to take a boat and go over to inspect it. It is built upon an island on which the great conqueror landed the day before he established Vera Cruz, but the island has entirely disappeared under the masonry of the fort, which now seems to rise directly from the bottom of the sea. It was begun in 1569, and not finished until 1633. It is considered the strongest fortress in the western hemisphere with the exception of Quebec, yet, it will be remembered that General Scott, in 1847, got behind it and landed his troops in Vera Cruz. It is now used principally as a prison, and the prisoners set upon the traveller immediately upon his landing and beg him to buy grotesquely carved cocoanut-shells, upon which they expend all their time. An intelligent guide is detailed to show the visitor about the fortress and point out the light-house, the weather observatory, and, most curious of all, the black and dismal dungeons in which the worst classes of prisoners are kept, below the level of the sea.

Nothing on this Continent could be more beautiful than the view of Vera Cruz from this great fortress: it is suggestive of Venice. If the day be clear, the mountain ranges back of the low line of buildings close to the water's edge, will be in full view, and among them will be the beautiful snow-covered peak of Orizaba.

The city presents little that is architecturally interesting. There are not many churches worth visiting, and churches are generally the most interesting features of Mexican cities. The Reform laid a heavy hand on the Church in Vera Cruz. It was from that city that the famous "Reform" decree was issued, and many of the churches have been turned to secular uses. One church tower has been turned into a light-house, and bears the name of Juarez, the author of the infamous decree confiscating the property of the Church. A former monastic building is used as a city-hall. The business houses



The Route of the Mexican Railway.

near the mole are substantial, but otherwise unpretentious. In the outskirts of the city the houses of the poorer class are built of bamboos and thatch. They are of the class of houses known as *jackals* in Mexico. There is a suggestion of a northern seaside summer resort in the sandy soil and the well-ventilated residences out a short distance from the business portion of the city.

The Alameda is the most picturesque feature of the Vera Cruz. The pavement, the fountain and the benches, all of masonry or a sort of concrete, are sadly dilapidated now, showing that the Alameda is no longer a fashionable resort. But the rows of cocoanut palms on both sides form a beautiful picture.

Vera Cruz is considered the cleanest of Mexican cities. In my next paper I shall mention a cleaner city—Jalapa—but, nevertheless, Vera Cruz *is* remarkably clean. The streets are built on a slight grade, and have a drain running through the middle. But to the turkey buzzards, constantly hovering over the city, is due most of the credit for the city's cleanliness. It is well that Vera Cruz is clean. Without its drains and its turkey buzzards, the *vomito* would

[1] Continued from No. 653, page 306.

be much more severe than it is, and the unhealthy season would be longer. As it is, it is perfectly safe to visit the city any time between November and April. ARTHUR HOWARD NOLL.

BOOKS AND PAPERS.

M. COUGNY'S is a capital book which ought to be read by all persons engaged in, or interested, in teaching. It describes the revival which took place some few years ago in the manner of teaching drawing; it gives the programmes of the different classes of schools, and it winds up with hints as to the arrangements of class-rooms for drawings, and the budget of the municipality for this department.

Two questions of moment are fully answered by the author — the error of the modern system of excessive division of labor, and the necessity of teaching the entire nation to draw; not necessarily in order to execute pictures, but in order to learn to observe, and to be able to carry out an idea. People do not all, as a matter of course, use their eyes; many are as blind as others are deaf — "*l'un écoute sans entendre, l'autre regarde sans voir,*" said Charles Blanc. "*Le monde se déroule devant les yeux du plus grand nombre comme une espèce de fantasmagorie où les formes changent, sans que rien vienne imprimer un souvenir précis dans leur esprit,*" (discourse of M. Poubelle at the Sorbonne, 1886); again, Decamps, in exposing the fallacy of Horace Vernet's pet phrase, "*Faites ce que vous voyez?*" justly and correctly remarks, "*Voir la nature, est une formule que le moindre examen reduit presque aux proportions d'une niaiserie. S'il ne s'agit que d'ouvrir les yeux, le premier rustre le peut faire; les chiens aussi voient. L'œil est sans doute l'alambic dont le cerveau est le récipient; mais il faut savoir s'en servir. . . . Il faut apprendre à voir.*" But how are people to learn to see? By learning to draw in their childhood. "*Avant d'apprendre à l'enfant à lire, il faut lui apprendre à voir,*" said Rousseau; and Jean Jacques was right. The earlier a child begins to draw, the quicker will be his power of observation; and whether a person has to pass his life in service, or in trade; in town or country; whatever may be his calling, a quick perception will be an immense gain. Therefore, says M. Cougny, it is necessary for every one that he should be taught drawing as he is taught to write, whether he be an agriculturalist, a manufacturer, a laborer, or a workman. Drawing should be part of a compulsory system of education, and as a necessary consequence, it should be free. The *écoles maternelles* are infant schools, modelled upon the Frœbel system of *kindergärten*, but with slight variations. What a much prettier name, by the way, than either the German kindergarten or the English infant school! Motherly school sounds even inviting to the child mind. At these, babes from two to seven years of age learn to make straight lines and curves, and to copy simple objects from the blackboard.

In the *école primaire* an advance is made. These classes include children from seven to twelve years, and the time spent upon drawing is from half-an-hour to two hours twice a week, the lessons being conducted by the ordinary teachers. The course consists of model and geometrical drawing. In the *cours supérieur* (children from eleven to thirteen) drawing from casts of ornament, from the round, and the elements of perspective are added by a special drawing-master; and manual, or technical education is commenced — not with the view of teaching a trade, but simply to educate the hand in skilfulness. Boys are taught the use of tools, turning, black-smithing, and such like work; girls, cooking, needle-work, cutting out, and so on. It is necessary to point out the usefulness of drawing in all these works? Would it be possible for a servant to put dishes all awry upon the dinner table, or for a dressmaker not to see how to cut out a costume from a sketched design, if one or other had learned to draw? The next step upwards, is the *cours d'adulte* for children after leaving the primary schools. These are held in the evening, in the same buildings as the day schools, and number between fifty and sixty. The *école professionnelle* was an idea of Eliza Lemonnier who founded the first for girls in 1848. These now number three, besides five others subventioned by the city. In all of them some fees are paid; the course consisting of classes for geometrical drawing, ornament, the figure, the life, anatomy, perspective, art history, and modelling, besides certain technical classes.

In 1882 a commission was held, to enquire into the question of the want of artistic feeling in the art manufactures of France; and the delegates of the various trades were unanimous in attributing the downward paths that French craftsmen had been pursuing, to the want of a knowledge of drawing, and the excessive division of labor. Watch-making, for instance, from being almost exclusively a French art, had left France for Switzerland, England, and America. This is true enough; but M. Cougny need not fear the rivalry of America in *artistic horlogerie;* the fact of France producing no more of the elegant watches and clocks of the seventeenth and eighteenth centuries, is mainly due to the absence of a demand for them.

Our watches are cheap (and I might say "nasty," *i. e.*, ugly) and as every man, women, and child now wants one, naturally they are produced to suit the pockets of the many. The same reason produces cheap flowers and fans. The best artificial flowers still come from France, indeed all others are wanting in taste; but inasmuch as all women and children, from the shop-keeper down to the street flower-girls, feel it incumbent upon them to hoist glaring roses and geraniums upon the top of their dirty hats, the supply of common and cheap flowers is necessary. A girl who loves finery, and can give eight cents for a flower, obviously cannot give fifty cents, even if she had the taste to prefer the dear one, which is highly improbable. And the same remarks apply to all art-trades, for there is scarcely an industry in which the superior taste of the Frenchman does not show itself. The Anglo-Saxon is ingenious and can produce cheap articles, but of taste he has, by nature, little or none. His work is strong and solid and good, or cheap and common and bad; but in either case wanting in artistic feeling. Therefore, from the art point of view, M. Cougny may be comforted; France holds her own still in artistic manufactures, unless cheapness alone be required. But if people want spurious art at a low price, of course America and England carry off the palm. As another example, observe the fans produced by the different countries; is there any comparison between those of France (and I ought to add Italy) and those of England, America and Germany? *Apropos* of fans, how many persons dream of the division of labor in that trade? It seems incredible, but M. Cougny tells that as many as fifteen and twenty persons are engaged in the production of one.

The result of the enquiry was the establishment of technical schools which should take the place of the old system of apprenticeship. In these, boys and girls are taught trades *professionally;* the technical classes of the other schools only being intended to make the children useful and skilful with their hands. But in the *écoles professionnelles* a boy, or a girl, serves a regular apprenticeship, and after three years, earns a certificate of proficiency in the trade. And here again, division of labor is as much as possible abolished. A girl who learns artificial-flower making, not only makes the parts of the flower, but she mounts them — which is not the case in the trade. The silversmiths and blacksmiths learn each part of their work, and a cabinet-maker not only makes the woodwork of his chair, but he carves it, stuffs it, and covers it, moreover, everything that is required in the different trades is made in the workshops. The result of this teaching will be seen in next years' Paris exhibition, as the pupils of the various schools are now engaged in fitting up an entire room, and making all its contents.

A great deal of the teaching is oral; and the pupils in addition to the subjects already mentioned, study designing for textile fabrics, ceramics, wall-decorations, etc., in *ateliers* specially arranged for the purpose. As M. Cougny says, "of what use is a good design, if the designer be ignorant of the processes of re-production? The motive of decoration must be appropriate to the material. How can an artist design wall-papers if he knows nothing of the process of paper-printing?" "*Fût-il un génie, le résultat sera nul, et quand on lui montrera l'effet produit par son ouvrage, le dessinateur n'en voudra pas croire ses yeux.*"

Boys between the ages of thirteen and sixteen, enter these schools by passing a simple examination. The course of instruction at the École Diderot (which is typical of the others), consists of the following subjects besides what is obligatory at the primary schools: French, mathematics, technology, history, geography, book-keeping, and the elements of physics, mechanics, and chemistry. The technical course consists of blacksmithing, engineering, carpentry, turning and carving, — all the pupils passing through each *atelier* during the first year. The daily work occupies six hours in the workshops, and four in the class-rooms for the first two years, and eight hours in the workshops and three hours in the class-rooms, the third year. At present Paris only possesses five of these technical, or apprentice schools, but it is intended to open more, and to include book-making (printing, binding, and the making of types) lithography in black and color, building, and masonry, for in all these trades, division of labor is so thoroughly carried out that the workman is, at present, only a human machine. A draughtsman designs a chair, a carpenter makes it, a carver decorates it, (or rather one man does the simple work, while another carves the figures or flowers); then comes the upholsterer to stuff and cover it — and not one of the men knows anything of the others' work. It is said to be better for trade, as celerity is gained by this system. But is rapidity and cheapness of production everything? Are there not many industries in which it would be gain to all persons concerned, if the products were fewer and more expensive? Besides, is man to be sacrificed to the product, or the product to man? If a man turns out an entire piece of work, if a woman makes an entire dress or bonnet, both feel a pride in their handiwork; but imagine the dreariness of always making the legs of a table, the sleeves of a dress, or the foundation of a bonnet! It is true the masters are against the abolition of this system; but if the men choose to educate themselves to be craftsmen instead of machines, the masters will have to put up with it. It is a workmen's question; and there is no doubt that when once they see the charm of carrying out their own designs as did the old craftsmen, they will be ready enough to change their system, and abolish specialists.

And the cost of the various classes for drawing in Paris? Nearly a million of francs; and be it noted that the money is not absorbed by the professors. Five inspectors receive 44,500 francs; directors receive 3,000 francs, masters 2,000 francs, and mistresses 1,200 francs

[1] "*L'enseignement professionnel des Beaux-Arts dans les Ecoles de la Ville de Paris,*" Par Gaston Cougny, Paris: Maison Quantin.

per annum; rather an unfair arrangement considering that the women work as hard as the men. The budget is based upon an economical foundation, but still the expenses are high, mainly from the fact that most of the instruction is free.

Mr. Cougny's book gives a list of subjects for examination, an account of prizes to be won, and various other details; and closes with a hope that before many years pass away, each school may have a museum attached to it. As at present organized, there is some truth in the saying that "*Les musées ne sont que les cimetières de l'art, des catacombes où l'on range dans une promiscuité tumulaire les restes de ce qui a vécu: une Venus voluptueuse à côté d'une Vierge mystique; un satyre à côté d'un saint: Luther en regard du pape; un tableau de boudoir en pendant à un tableau d'autel*, (Théophile Thore); and Viollet-le-Duc gives vent to a similar sentiment: "*Nos Musées sont faites bien plus pour la montre que pour l'étude.*" This is only too true; but many town-councils have acknowledged the fact, and created what might be called industrials museums attached to technical schools. Mr. Cougny gives an account of the one at Berlin, which is a type of those existing at Munich, Nuremberg and other German towns.

In conclusion, who will not endorse the words of J. J. Rousseau; "*Savoir se servir de ses doigts est une supériorité dans toutes les conditions de la vie.*" Why manual work should ever have been despised, it is difficult to say; but the days when trumpery clerkship is considered a more gentlemanly calling than a skilled craft, are probably numbered.

S. Beale.

SOCIETIES

ARCHITECTURAL LEAGUE COMPETITION. — ANNOUNCEMENT.[1]

THE Architectural League takes pleasure in announcing that it has instituted, in connection with its exhibition, an *annual competition*, open to all draughtsmen in the United States under the age of twenty-five, the object of such competition to be the promotion of good designs and the improvement of draughtsmanship.

As prizes it offers to the design placed first a gold medal, to be known as *the Gold Medal of the Architectural League;* and to the design placed second, *the Silver Medal of the Architectural League.*

The conditions for admission to the competition are:

First. — That the competitors shall be residents of the United States, and under the age of twenty-five; and,

Secondly. — That the drawings shall be made in conformity with the following programme, and, in all parts and portions entirely by the hand of the competitor.

The drawings will be judged by the jury appointed for the purpose.

The successful drawings, and such others as may be thought worthy, will be hung at the exhibition, the first and second prize drawings being so indicated, and these latter shall thereupon become the property of the league.

John Beverley Robinson, *President.*
Frank A. Wright, *Secretary*, 47 Liberty Street, New York City.

PROGRAMME.

For the second annual competition the following programme has been arranged:

The drawing shall exhibit *The Tomb of an Illustrious Architect.* The base-course of the tomb not to exceed in area 144 square feet; the size of the plot, 25 × 25 feet.

Each contributor to exhibit two sheets of drawings; one to contain plans and elevations at the scale of one-half inch to the foot, and one to exhibit a perspective view. The plan and elevation sheet to be finished in line with India ink and the lining-pen. No brush-work on this sheet, except sections. No shadows are to be cast.

The perspective to be rendered at will. Each sheet to be cut to the uniform size of 24 × 32 inches, and to be white card or Bristol board, or Whatman paper mounted on a stretcher. No colored borders, frames or glazing will be allowed.

Each sheet must be distinguished by a motto or cipher. A sealed envelope bearing the same motto or cipher must contain the name, full address, place and date of birth of the author, and must be mailed to the office of the Secretary, Mr. Frank A. Wright, 47 Liberty Street, New York City.

Drawings are to be delivered flat, carriage paid, on or before December 5th, 1888, to Frank A. Wright, Secretary, No. 368 Fifth Avenue, New York City. They will be returned at the close of the exhibition at the expense of the contributor.

Charles T. Mott,
Charles A. Rich,
Ernest Rollin Tilton,
Committee.
John Beverley Robinson,
Frederic Crowninshield,
Ex-officio.

[1] A copy of the above circular can be had by applying to E. R. Tilton, secretary of the Medal Committee, 23 Warren Street, New York City.

AMERICAN INSTITUTE OF ARCHITECTS.

The Twenty-Second Annual Convention of the American Institute of Architects will be opened at the Buffalo Library Building, in the City of Buffalo, New York, on Wednesday, October 17th, 1888, at 10 A. M. The Genesee Hotel (within two blocks of the meeting hall), is suggested as the headquarters.

Rates to the Institute members, $3.00 per day, American plan, or rooms without board, $1.00 per day and upward. This hotel furnishes a "Headquarters" parlor free to the Convention.

Please notify Committee at Institute office, 18 Broadway, New York, by return mail, what papers you propose to read.

W. W. Carlin,
Emlen T. Littell,
A. J. Bloor,
Committee of Arrangements.

MASTER STEAM-FITTERS' ASSOCIATION, CHICAGO.

The Master Steam-Fitters' Association of Chicago has been in existence for over a year and the benefits derived by the trade have been so great that we believe it will be to your advantage to organize a similar association at once. To that end we offer you the benefit of our experience and will give you any assistance in our power and answer any questions you may wish to ask.

When a sufficient number of associations have been started in the Western cities, it is our intention to call a convention of delegates from the different bodies to organize a National Association for our mutual benefit, similar to the Master Plumbers.

Besides cultivating a friendly feeling toward each other by our social intercourse, we have accomplished, among other things, the following: Successfully resisted the demands of the union strikers; established uniform hours of labor; established uniform discounts and prices for materials.

We again urge you to organize at once and notify us when your organization is completed.

If you already have an organization perfected, you will oblige us by sending the names of the officers to our secretary, and any other information you think will interest us. Our interests are mutual and we feel that much good can be accomplished by united effort.

The Master Steam-Fitters of Chicago.
C. H. Simmons, *Secretary,*
72 Market Street.

COMMUNICATIONS

WILL SOMEONE ANSWER THESE QUESTIONS?

Boston, Oct. 4, 1888.

To the Editors of the American Architect: —

Dear Sirs, — Your paper has been taken in the office of this Company for many years. It has been useful to myself and to the experts who are employed in the supervision of mills for fire purposes or who are engaged in making plans and specifications for the safe construction of mills, works and mill store-houses. Your paper has contained many valuable treatises, accounts of scientific investigations, forms of contract and the like. May I be permitted to suggest, however, that the weekly illustrations and inspections of many buildings, such as churches, college-buildings, school-houses and the like would be very much more satisfactory if they were accompanied by such plans or working-drawings of the framing and of the interior construction as would enable one to know whether they would be safe and suitable buildings or whether they might not be examples of the common practice of combustible architecture.

It is seldom that one finds either in your paper, or in any other publication devoted to architecture, such a plan of the construction, specifications, and description as would enable a student to decide whether the building had been or would be well-constructed or not; whether the timbers were rightly computed and adjusted; whether the computations on which the floors and columns had been specified had been considered with a view to a true factor-of-safety; whether or not the timbers had been mangled by bad framing, by mortise and tennon or other device for weakening the strength at critical points; whether or not there were suitable cut-offs in the walls to prevent the passage of sparks or of fire behind the framings or in the partitions or whether or not the building might not happen to be a cellular structure in which all the wooden flues from the cellar to the hollow roof were well connected so as to assure the maximum of loss from the minimum of cause, together with the unobstructed range for incendiary rats and mice.

Why is it that churches are, as a rule, bad fire-risks even when the outer walls are of brick or stone? Why is there customarily an open wooden flue from hollow floor to hollow roof? Why do we burn two hospitals, asylums or almshouses every month, with a large loss of life every year? Why is it that within a radius of half a mile from the Old South Church, including what may be called the section

of Boston to which the attention of architects has been given more than to any other, there is not one building in ten, probably not one in fifty which if moved out into the centre of a ten-acre lot, detached from all other buildings and fitted with all its present appliances for the extinction of fire would not be refused by any or all of the Factory Mutual Insurance Companies if asked to insure it without an almost complete re-construction of the interior?

Why is it that cotton and woolen factories, paper-mills and wood-working shops have been much safer and better fire risks than the average church, hospital, asylum or college building?

Why is it that there is grave distrust on the part of those who propose to construct mills, works or other buildings for industrial purposes, of the competency of most of the professional architects?

Why is it that when due regard is to be given to strength, to safety from fire, and to the disposition of the timber in the best manner to meet the special requirements of the mill, or of the factory store-house, that the average architect is seldom consulted at all, except to fit a design or outside elevation, to the conditions of the structure already determined upon without such previous consultation? What indications do you customarily give in the designs which you print, to show that any attention has been given to the conditions of stability, freedom from vibration, or safety from the ordinary risks of fire?

I confess that when I so often read an account of the destruction of a college building or a library by fire, I put to myself the question: What has the education been good for in that college if the men in charge of it are incapable either of determining for themselves what safe construction may be or of selecting an architect by whom the rules of safe construction may be put in practice?

When I read of the destruction of a hospital, asylum or almshouse, and when I know from the personal inspection of State hospitals and prisons not far away, that many of them are nothing but costly whited sepulchres waiting only for a spark to subject the inmates to cremation, I am apt to ask myself if there are not more incompetent people in this community who might be called feeble-minded than have yet been committed to asylums for that class.

When I find upon the school-houses of Boston apparatus intended to secure the escape of the pupils in case of fire, which has been in position many years, which when practically examined (after being put on trial by newspapers) by myself and one of my inspectors formerly on the Boston Fire Department when this rubbish was put up, that *is found to be a useless fraud*, I can but ask the question whether or not the true kind of education in *building* and architecture has yet been given, after all the attempts that have been made to raise the profession of architect above that of a mere draughtsman, pictorial designer or copyist of art which does not suit our climate or our conditions. I confess to becoming savage and cynical as I witness the unnecessary destruction of property by fire which is due to incapacity, ignorance or what may be called artistic imitation.

In this criticism I do not intend to refer to the very expensive fire-proof buildings which are becoming common in the principal cities, constructed without regard to cost and with a view to absolute safety. What is needed is that the average structure which the owners cannot afford to make fireproof may be made very much safer than they commonly are. I am well aware that the greater part of the difficulty lies with the owners and not with the architects; but it is not always so. I have reason to know that many persons who have been responsible for the re-construction of buildings after they have been injured or destroyed by fire, especially in several cases of college buildings, have immediately given instruction to their architect to adopt safe methods of framing and building, on receipt from ourselves of some of our official documents relating to the safe construction of factories. It is now my common practice whenever I see a notice in the paper of the destruction by fire of a hospital, an asylum, or a college building, to become an anti-combustion missionary and send these documents to the persons whom I may assume to be charged with rebuilding. In several cases I have positive knowledge that these documents have been gratefully received and plans have been immediately altered and amended and right methods have been adopted on receipt of them. I have therefore good reason to attribute a very large part of the dangerous construction of such buildings to the fact that, as a rule, the architect consulted usually follows an extremely bad system of construction, and the persons who are responsible for placing the contracts have never had their attention called to the fact that these costly methods are thoroughly bad.

Might not architects find out a way similar to the one which we adopt in dealing with our members, to wit: to prove to owners that safety and true economy go together? That good construction of buildings of a permanent character costs no more than bad; often less? The large factories which have lately been constructed of the most solid kind, brick, stone, timber and iron combined with a view to strength, stability, light, ventilation and the like, cost on the average about seventy cents per square foot a floor above the foundation, or less than $5 per foot of ground covered, six floors high, including foundations of average cost on good ground. The basement floors, when made use of, are laid in such a way as to be safe from what is called dry-rot. The roof is so constructed that the upper room, in place of being an oven in summer and a refrigerator in winter, is the best room in the factory. It may be alleged that the problem of mill construction is one for the engineer to cope with rather than for the architect. Is it so? Are not the same rules which make the mill safe, solid and durable, suitable to the city warehouse?

I witness even in recent city warehouses, to which great attention seems to have been given to secure solid and safe construction, errors which no skilful constructor of mill buildings would ever commit, especially in the disposition of the materials of the roof.

I am aware that architects meet these suggestions with the comment that the factory underwriters deal only with the skeletons of buildings; with the naked walls, the timbering, the posts and the floors. This is very true; but there are many methods of clothing this skeleton safely and suitably without excessive cost; there are plenty of methods of carrying out the principles of safe construction without losing sight of artistic design. None knew this better than the late H. H. Richardson, and no one had greater skill in applying safe methods to some of the best and most artistic of his later buildings.

Having lately been called upon to deal with a class of buildings, in the construction of which the underwriters had not previously been consulted, I have again been painfully impressed with the costly and wasteful system under which the art of combustible architecture is still practised in many places. EDWARD ATKINSON.

[As we feel that there may be several architects who would like to answer the specifications of this challenge, we will not throw obstacles in their way by answering any part of it now. — EDS. AMERICAN ARCHITECT.]

A SCULPTOR'S STUDIO-GARDEN.

Commend me to a garden neat,
A quiet modest small retreat,
With just enough of shrubs and flowers
To vary now and then my hours,
And cheer the mind and rest the eye,
With art when somewhat tired out,
Where, from my studio close by
With Nature I can walk about,
And rest and muse a little while,
A little space — some twenty paces
From end to end — t'will make you smile,
For that is all its space embraces,
With gravelled walks, and little beds
Where little flowers raise their heads,
And little shrubs — for none are tall,
And vines and jasmine line the wall.
No one admires more than I
The gardens of Nobility,
With vast variety elate
In all their vegetable state:
Yet, not for me is multitude,
Each flower scarcely known by sight
And most but at a distance viewed,
Acquaintanceship by far too slight!
O! not for me is aim so great,
But rather a homely *tête-a-tête*
With the few I love to tend,
Where every plant's my intimate
And every flower my friend.

J. B.

NOTES AND CLIPPINGS

SELF-EXTINGUISHMENT OF FIRES. — The apparatus which is most promptly used in cases of burning buildings and also with the least efficacy, is the human voice, notwithstanding the historical fact that blowing has accomplished nothing since the days of Jericho. Yet there are numerous instances where fires have been extinguished through causes connected with their origin, and so completely outside of precedents that they serve as instances of the happening of the unexpected. In this connection we do not refer to the fires extinguished by automatic-sprinklers, where the result is clearly what has been expected to happen. Notwithstanding the fact that when a fire occurs on property protected by automatic-sprinklers, those present avail themselves of all the means of grace in the shape of the usual fire-apparatus at hand, yet there are numerous instances where fires have occurred at night or in rooms vacant at the time, where the fact has been made known only by water percolating through the floors, or the sound of the automatic fire-alarms, or from the sprinklers which have already come into active operation, the fire having called down means for self-extinguishment. But the instances which we have in mind are those where the means of extinguishment were not expected, as in the well-known Cathedral Building in Boston, where a fire, caused by spontaneous ignition in a store-room, melted the lead water-pipes, and the water issuing from them extinguished the fire. A similar instance happened in a building in Market Street, Philadelphia: some sheet-metal pails were returned by the purchaser to a tinsmith in Chester, Pa., with the complaint that they were not tightly made. The manufacturer resoldered them, and in order to test his work filled them with water and hung them upon hooks at the ceiling. While the men were at dinner during the noon hour, a fire heated the upper part of the room so that the bails connecting the handles to the pails became unsoldered, and the dropping of the pails of water dashed out the fire. Some waste left upon the top of a steam-pump at Watertown, Mass., blazed from spontaneous ignition, and this in turn set fire to the lagging around the steam cylinders and the feed-pipe, where it melted the soldered attachments of a continuous automatic oiler. The steam from the feed-pipe was discharged through the small tubes formerly leading to the oiler, and extinguished the fire. There have been numerous instances of fires which have ceased for want of air.

During the war of the rebellion attempts were made to burn New York City, as the result of a conspiracy, fires being started in several hotels; but in order to prevent premature detection the culprits closed up the rooms so tightly that the fires were smothered. At an hotel in Woonsocket the steam-pipes caused a fire in the spaces in the walls of the building, which was extinguished for want of air to support combustion. The time of the fire is unknown, as its occurrence was not discovered until some time afterwards, when in the progress of an alteration to the building the facts were made apparent. It may be interesting to know that in this instance the steam-heating service was ordinarily used at a pressure of about 4 lbs. to the square inch during the coldest weather, and that the safety valve was so arranged that the pressure could never exceed 10 lbs. A spark of static electricity proceeding from a belt, ignited leaking gas and this in turn set cotton on fire, which operated the automatic sprinklers and extinguished it. An attempt was made to destroy a block of new dwellings at Brookline, Mass., before the buildings were entirely finished. Some people alarmed by the smoke which was seen in each division of the structure, rushed in to save doors and portable fixtures, when it was noticed that the fires did not appear to gain any headway, and when the smoke had entirely died away, it was found that the incendiary had placed lighted candles in sawdust and other inflammable material in drawers and closets, but with such limited supplies of air that combustion could not be supported and the fires became smothered. — *Engineering.*

The Biggest Flumes in the World. — The total length of the flume, when finished, will be thirty-five and three-quarter miles, and the thirty-fourth mile is now completed. The redwood came from Humboldt and vicinity, in Mendocino County. Redwood was used exclusively in the box of the flume. It was strictly clear selected redwood, without knots or sap. The work of the contractors began early in June of last year. On June 27 the first load of lumber was hauled out. An idea of the gigantic character of the work that has since been done can be gained by noting the number of animals and men that were employed. As high as 500 head of horses and mules have been in service at one time, being driven in eight and ten horse teams. During a good portion of the time sixty teams have been travelling back and forth hauling the lumber. Besides the teamsters from seventy-five to 125 men were constantly employed in the work of construction. With the yard hands and other helpers it is safe to say that 200 men were constantly employed in the various departments of the work. Mr. Carle estimated the amount of lumber used in the flume at 9,000,000 feet. This is a very conservative estimate, and in all probability considerable more was used. The vastness of this amount of lumber can better be impressed on the mind of the reader by some comparative statements. Had this lumber been all loaded on wagons at one time it would have required 3,000 wagons and 25,000 horses to haul it. The string of teams, if drawn into line one after the other, would make a procession over fifty miles long; the amount of lumber used in the construction of the flume would be sufficient to erect over 200 large two-story residences and would load nearly forty large ships. A tree that will yield 1,000 feet of lumber is a large one, and yet it would require 9,000 of such trees to furnish as much lumber as was consumed in building the flume. This number of trees, as can readily be seen, would make quite a forest. In the course of the flume there are 315 trestles, the longest of which is 1,700 feet in length and eighty-five feet high. Its construction required 250,000 feet of lumber. This is the Los Cochos trestle. The Sweetwater trestle is 1,200 feet long and eighty-five feet high. The main timbers used in these trestles are 10 x 10 and 8 x 8. They were put together on the ground and raised to their position by horse-power. There are eight tunnels in the course of the flume, the longest of which is 2,100 feet in length. The tunnels are 6 x 6 feet in size, with convex shaped roofing. Each mile of the flume required, on an average, 250,000 feet of lumber for its construction, and the redwood used in the box is all two inches thick. The San Diego flume is pronounced by men experienced in such enterprises to be the largest ever built in the world. So stupendous was the undertaking that at its conception many declared that it could not be built. Every obstacle has been now overcome, however, and by the 2d or 3d of September the last spike in the flume will be driven. The water will then be brought to the reservoir, about ten miles from San Diego, from which point it is proposed to pipe the water to the city. In regard to the mechanical work done in the construction of the flume, all who have examined it declare that it is first-class in every particular. Engineers have fixed the grade every mile in order as near as possible to insure perfection in that important particular. The flume has a uniform grade of four and seven-tenths feet to the mile. An idea of the difficulties that have been overcome in the construction of the flume may be gained from a consideration of the fact that much of the lumber had to be drawn 700 and 800 feet up the sides of steep and rocky mountains. The lumber was loaded on cars that ran on a portable track. The cars were attached to a heavy wire cable. The motive power was furnished by a portable cable engine. The flume is now completed, and as the work of laying the pipes from the reservoir is comparatively an easy one, it will not be long before the water from the great flume will be flowing into our city. — *The San Diego (Cal.) Sun.*

Recovery of a Long-lost Tapestry — "When Marguerite of France was married to Victor Amadeus of Savoy, she took with her to Italy twenty pieces of the very finest Gobelins tapestry, illustrating classical legends," says *London Truth*. "This unique tapestry, which was of immense value, disappeared mysteriously when Napoleon invaded Italy, for it had been hidden away in case the French might think proper to carry it off, which they would certainly have done. It had been so carefully concealed that, after some years, when calm was restored, it was found impossible to discover it, and the two officials who had put it away were both dead. The tapestry had been almost forgotten till about a month ago, when the Marquis Villamarina, the master of the royal household, was making a thorough investigation of the palace at Turin from roof to cellar, and behind some huge chests in a storeroom in the highest story he found a secret chamber, in which was concealed the long-lost tapestry, and it had been very little injured by its hundred years of hiding. King Humbert has ordered that the tapestry is to be carefully repaired and cleansed, after which it is to be sent to Rome and hung in the Quirinal in the apartments which the Emperor William is to occupy during his visit next month."

TRADE SURVEYS

There is a growing sentiment in financial, business, railroad and manufacturing circles that the tariff question ought to be taken out of the domain of politics as soon as possible. The tariff question is or ought to be a matter purely of business. Politicians have seized upon it to make ammunition, and they are making the most of it to the detriment of the business interests of the country. The question has been broached involving the possibility of creating some sort of a commission which would be a permanent body which should investigate thoroughly into the merits of all tariff legislation, and to make reports to Congress from time to time as to what changes are desirable. Such a commission going into and investigating the commercial necessities of the country, we would naturally suppose to be better able to decide upon tariff matters than can possibly be done in Congress where the business interests of the country are made the foot-ball of politicians. The defeated party will, no doubt, prepare itself after the election to renew the contest. Inquiry among capitalists, large manufacturing interests and railroad interests show very clearly that there is a large amount of capital that is held back till some solution is reached through investigations that their interests will not be tampered with by home or outside agencies. There is a large amount of capital from abroad anxious to seek employment on this side. The success of the copper syndicate has done much to attract attention this way. The success of our own syndicates and trusts in cornering products, and in forcing up prices, has been drawing the attention of foreign capitalists to the advisability of taking their money and putting it where from 75 to 100 per cent can be realized. There is one point worth alluding to; namely, the probability of a speculative craze in this country. It is the natural outcome of the compact organization of business interests. It will seek activity in landed operations and in securing control of mining property. Several schemes are under contemplation looking to the securing of control of a large amount of at present comparatively valueless territory in the arid regions of the West. Representatives of foreign moneyed concerns are now making a careful investigation and a sort of inventory of resources of mining properties and mining resources all through the Southwest. There will be some large purchases made with the assistance of foreign capital which will lay the foundation of something like a monopoly. A large amount of idle capital is obliged to seek some points where its employment will be permanent. Many economists are inclined to look upon this tendency as fraught with danger. However this may be there are a number of important advantages to be secured, and in one respect a great flow of capital into the producing interests here. Reports from nearly all commercial centres show that money is in good supply. Rates are stronger partly in sympathy with the advance in rates in the Bank of England. There is nothing to indicate the probability of a scarcity of money for all legitimate business purposes. Leading railroad stocks have gained in strength. Manipulators are endeavoring to stimulate a bull movement that has manifested itself here and there. The outside public are nibbling and the insiders are rolling out every possible bait they can. The increasing volume of traffic is working in their favor. The general advance in freight rates will strengthen confidence not only in railroad bond purchasing, but in the belief that there will be more than a moderate revival in railroad-building within the next six months. The organization of a good many railroad properties is in progress. Leases are being made, extensions are being entered into and affairs between the Western and Eastern trunk lines are assuming a more harmonious attitude. Railroad builders themselves are formulating plans looking to the building of some important enterprises early next year.

The iron trade has retained the strength which it has been quietly accumulating since September 1st. Prices of crude iron have advanced from fifty to $1.50 per ton. Merchant iron has gained about $2.00 per ton and all kinds of mill products are higher in price. The coal trade is exceptionally active. The anthracite production is 2,700,000 more than at this time last year. The bituminous production from sources which mainly supply the markets along the Atlantic Coasts was this year 8,990,211 tons as against 758,846 tons last year. The anthracite production this year over last will be about 3,500,000 tons. The Reading Company has spent $1,700,000 in improving its mining properties. This company is now about constructing an enormous depository for coal in the heart of the coal region, which will enable it to accommodate requirements in the case of unavoidable suspension of production at the mines. A great deal of new bituminous coal territory is being opened up and in the far West a large number of orders have been worked up. There will be a great saving of freight rates in the far West and in the South from the supply of coal from local deposits. This increase in the supply of fuel will mark an era in the development of small manufacturing interests, which for years have been held in check by the impossibility of securing cheap coal. The car-building shops of New York, Pennsylvania and Ohio and one or two Western States have been pretty well loaded up with orders within the past thirty days. Railroad managers contemplate the placing of very heavy orders for cars, gondolas for cars of all kinds. The new car-building shops and railroad shops in the Southern States are booking orders at the rate which authorizes an increase of car-building capacity next year. The managers of several Southern roads are now negotiating for the construction of several large machine-shops, and steps have been taken for the establishment of a locomotive works at some point in the South. Trade combinations have gone very far to wipe out the extremely low prices on staple goods. The textile manufacturers of New England are still leading. Foreign importations are threatening. Southern textile mills are paying good dividends. Cotton planters hold to their stocks in the Northwest and similar satisfactory conditions exist among the cultivators of the soil. They will hold their ground for the very best possible prices that they can realize. Speculators will probably not attempt a cornering of the crop. The wheat victory, notwithstanding the advance it has caused in retail markets throughout the country, brings with it some compensating advantages. There is an improving tone generally throughout the manufacturing interests. Any further anticipation of wants will most likely lead to a slightly higher range of prices. Manufacturers themselves desire to avoid this advance. Margins are now fair, but not high enough to stimulate additional investments in channels of production.

S. J. Parkhill & Co., Printers, Boston.